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OF

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PREFACE.

THE following work has engaged my utmoſt application for ſome years. Several performances on the ſame ſubject have already appeared; as Sir H. Manwaring's *Seaman's Dictionary*; Boteler's *Sea Dialogues*; Guillet's *Gentleman's Dictionary*, and Blanckley's *Naval Expoſitor*, &c. Far from exhibiting an enlarged and comprehenſive view of naval affairs, theſe productions are extremely imperfect, according to the very circumſcribed plan which their authors have adopted. There are beſides, the *Dictionnaire de Marine* of M. Aubin, publiſhed in Holland; and that of M. Saverien, publiſhed in France. Theſe are indeed voluminous, but very deficient in the moſt neceſſary articles. Beſides a circumſtantial detail of the local œconomy of different marine departments, they are ſwelled out with aſtronomy, navigation, hydrography, natural hiſtory, &c. all of which are abundantly better treated in other compoſitions. Of the machinery of a ſhip; the diſpoſition of the rigging on her maſts and yards; and the comparative force of her different mechanical powers, their accounts however are often vague, perplexed, and unintelligible. With regard to her internal go-

vernment in action; to the general regulations of the line of battle; and to the principal movements in ſailing, they are almoſt totally ſilent. Had any of theſe works been executed with tolerable ſucceſs, it might have rendered mine unneceſſary; or probably have introduced it in the form of a tranſlation.

I acknowledge with great pleaſure the advantages I have derived, in the proſecution of this work, from ſeveral authors of diſtinguiſhed reputation: in reality however none of thoſe above-mentioned are of the number. In that part which is dedicated to the theory and art of ſhip-building, I owe conſiderable obligations to the ingenious M. Du Hamel. The principal pieces uſed in the conſtruction of a ſhip, together with their combination and diſpoſition, are copiouſly and accurately deſcribed in his *Elements of Naval Architecture:* and his general account of the art itſelf is perſpicuous and comprehenſive. Many of his explanations I have therefore implicitly adopted.

In treating of the artillery, I have occaſionally conſulted *Le Blond*, *Muller* and *Robins*, beſides ſelecting ſome valuable materials from the manuſcripts of officers of long experience and eſtabliſhed reputation in that ſervice. Whatever relates to the rigging, ſails, machinery, and movements of a ſhip; or to the practice of naval war, is generally drawn from my own obſervations; unleſs where the author is quoted.

As there are abundance of books profeſſedly written on aſtronomy, and the theory of navigation, I have totally

totally omitted the terms of the former, as foreign to my plan; and ſlightly paſſed over the latter; becauſe no reader could acquire a ſufficient idea of thoſe ſciences from ſo partial a deſcription. Many of the leaſt important parts of a ſhip, as well as of her rigging, are very generally defined. To explain the track of every particular rope, through it's different channels, would be equally uſeleſs and unintelligible to a land reader: to mariners it were ſuperfluous: and even the youths who are trained to the ſea would reap little advantage from it; becauſe their ſituation affords them much better opportunities of making theſe minute diſcoveries.

I have in general endeavoured to give the etymology of the moſt material expreſſions, unleſs when their evident analogy to common words rendered this unneceſſary. Many reaſons may be alledged for introducing the French ſea-terms and phraſes; particularly that obvious one, of underſtanding their pilots, when we may have occaſion for their aſſiſtance. Wherever it was found neceſſary to explain one technical term by another, the latter is uſually printed in italics the firſt time it is mentioned; ſo that the reader may refer to it for a further explanation.

As the plates of this publication were intended to illuſtrate the various objects to which they refer, they are little ornamented; but have in general the recommendation of ſimplicity and geometrical truth. In this part I have been particularly favoured with many original drawings, which are uſually conſidered amongſt the inac-

ceſſible

ceſſible *arcana* of ſhip-building. They are much more numerous, uſeful, and correct, than what has hitherto appeared in any work of the kind. In fine, I have endeavoured, to the beſt of my judgment, to retrench the ſuperfluities, and ſupply the deficiencies of former writers on the ſame ſubject, as well as to digeſt and methodiſe whatever appeared looſe or inaccurate therein.

This undertaking was firſt ſuggeſted to me by my worthy and ingenious friend George Lewis Scott, Eſq; who conſidered it as a work of extenſive utility. Indeed, in a country whoſe principal ſources of ſtrength are derived from the ſuperiority of her marine, it is evidently wanted. I have the pleaſure alſo to know that Sir Edward Hawke, and ſeveral officers of reſpectable abilities in our navy, are of the ſame opinion. To this may be added, what the celebrated M. Du Hamel lately obſerved, in a letter to me, *Ce livre manquoit abſolument*; *celui qui a été imprimé en Hollande, et qui a eu un debit conſiderable, eſt tres imparfait*; *celui de M. Saverien eſt encore plus mauvais.* I mention this expreſsly, becauſe ſome ſea-officers have conſidered the work unneceſſary. It is however ſubmitted, with all poſſible deference, to ſuperior judges; to men of ſcience and letters, who know the difficulty of explaining the parts of a mechanical ſyſtem, when the readers are unacquainted with the ſubject.

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A B A A B A

ABACK, *(coëffé*, Fr.) the ſituation of the ſails when their ſurfaces are flated againſt the maſts by the force of the wind.

The ſails are ſaid to be *taken aback*, when they are brought into this ſituation, either by a ſudden change of the wind, or by an alteration in the ſhip's courſe. They are *laid aback*, to effect an immediate retreat, without turning to the right or left; or, in the ſea-phraſe, to give the ſhip *ſtern-way*, in order to avoid ſome danger diſcovered before her in a narrow channel; or when ſhe has advanced beyond her ſtation in the line of battle, or otherwiſe.

The ſails are placed in this poſition by ſlackening their lee-braces, and hauling in the weather ones; ſo that the whole effort of the wind is exerted on the fore-part of their ſurface, which readily puſhes the ſhip aſtern, unleſs ſhe is reſtrained by ſome counteracting force. See BACKING, and BRACING.

It is alſo uſual to ſpread ſome ſail aback near the ſtern, as the mizen-top-ſail, when a ſhip rides with a ſingle anchor in a road, in order to prevent her from approaching it ſo as to entangle the flukes of it with her ſlackened cable, and thereby looſen it from the ground. See ANCHOR,

Fig. 14. plate III. diſcovers the plan of a ſhip, *a b*, with her main-top-ſail, *c d*, aback; in which the curved doted line expreſſes the cavity of it, as blown back by the wind on each ſide of the maſt. The fore-top-ſail, which is full, is exhibited by the line *e f*. Fig. 13. repreſents a perſpective view of the ſhip in the ſame ſituation; and the dart ſhews the direction of the wind upon both.

Lay all flat ABACK, the order to arrange all the ſails in this ſituation.

ABAFT, *(arriere*, Fr. *abaftan*, Sax. behind) the hinder part of a ſhip, or all thoſe parts both within and without, which lie towards the ſtern, in oppoſition to afore; which ſee.

ABAFT, *(arriere de*, Fr.) is alſo uſed as a prepoſition, and ſignifies *further aft*, or *nearer the ſtern*; as, the barricade ſtands *abaft* the main-maſt, i. e. behind it, or nearer the ſtern.

ABOARD (*à bord*, Fr. *abordo*, Ital.) the inſide of a ſhip: hence any perſon who enters a ſhip is ſaid to go *aboard:* but when an enemy enters in the time of battle, he is ſaid to *board*. A phraſe which always implies hoſtility. See the article BOARDING.

To fall ABOARD of, (*aborder*, Fr.) to ſtrike or encounter another ſhip, when one or both are in motion; to be driven upon a ſhip by the force of the wind or current.

ABOARD-*main-tack!* (*amure la grande voile!* Fr.) the order to draw the main-tack, i. e. the lower corner of the main-ſail, down to the cheſs-tree. See CHESS-TREE.

ABOUT, (*reviré*, Fr. *abutan*, Sax.) the ſituation of a ſhip immediately after ſhe has *tacked* or changed her courſe by going about, and ſtanding on the other tack. See TACKING.

ABOUT-SHIP! (*adieu-va!* Fr.) the order to the ſhip's crew to prepare for tacking.

ABREAST, (*par le travers*, Fr. of *breeſt*, Sax.) ſide by ſide, or oppoſite to; a ſituation in which two or more ſhips lie, with their ſides parallel to each other, and their heads equally advanced.

This term more particularly regards the line of battle at ſea, where, on the different occaſions of attack, retreat, or purſuit, the ſeveral diviſions of a fleet are obliged to vary their diſpoſitions, and yet maintain a proper regularity by ſailing in *right* or *curved* lines. When the line is formed *abreaſt*, the whole ſquadron advances uniformly, the ſhips being equally diſtant from, and parallel to each other, ſo that the length of each ſhip forms a right angle with the extent of the ſquadron or line *abreaſt*. The commander in chief is always ſtationed in the centre, and the ſecond and third in command in the centres of their reſpective diviſions. See this further illuſtrated in the article LINE.

ABREAST, within the ſhip, implies on a line with the beam, or by the ſide of any object aboard; as, the frigate ſprung a leak abreaſt of the main hatch-way, i. e. on the ſame line with the main hatch-way, croſſing the ſhip's length at right angles, in oppoſition to *afore* or *abaft* the hatch-way. See ABAFT.

We diſcovered a fleet ABREAST *of Beachy Head*, i. e. off, or directly oppoſite to it.

ACORN, (*pomme de giroüette*, Fr.) a little ornamental piece of wood, faſhioned like a cone, and fixed on the uppermoſt point of the ſpindle, above the vane, on the maſt-head. It is uſed to keep the vane from being blown off from the ſpindle in a whirlwind, or when the ſhip leans much to one ſide under ſail. See plate I. fig. 1. where *a* repreſents the acorn, *b* the vane and ſtock, *c* the ſpindle, and *d* the maſt-head.

ADMIRAL, (*amiral*, Fr.) an officer of the firſt rank and command in the fleet, and who is diſtinguiſhed by a flag diſplayed at his main-top-maſt-head. Alſo an officer who ſuperintends the naval forces of a nation, and who is authoriſed to determine in all maritime cauſes.

The origin and denomination of this important office, which ſeems to have been eſtabliſhed in moſt countries that border on the ſea, have

given riſe to a great variety of opinions. Some have borrowed them from the Greek, others from the Arabic, while a third ſort, with greater probability, derive both the title and dignity from the Saracens[a]. But ſince no certain concluſions have been deduced from theſe elaborate reſearches, and as it rather appears the province of this work to give the reader an idea of the office and duty of an admiral at ſea, than to furniſh an hiſtorical or chronological detail of the rank and power with which admirals have been inveſted in different nations, we ſhall contentedly reſign this taſk to the ingenious lexicographers, who have ſo repeatedly entertained us with ſuch critical inveſtigations.

The Admiral, or commander in chief of a ſquadron, being frequently inveſted with a great charge, on which the fate of a kingdom may depend, ought certainly to be poſſeſſed of abilities equal to ſo important a ſtation and ſo extenſive a command. His ſquadron is unavoidably expoſed to a variety of perplexing ſituations in a precarious element. A train of dangerous incidents neceſſarily ariſe from thoſe ſituations. The health, order, and diſcipline of his people are not leſs the objects of his conſideration, than the condition and qualities of his ſhips. A ſudden change of climate, a rank and infectious air, a ſcarcity, or unwholeſomneſs of proviſions may be as pernicious to the former, as tempeſtuous weather or dangerous navigation to the latter. A lee-ſhore, an injudicious engagement with an enemy greatly ſuperior, may be equally fatal to both. He ought to have ſufficient experience to anticipate all the probable events that may happen to his ſquadron during an expedition or cruiſe, and, by conſequence, to provide againſt them. His ſkill ſhould be able to counteract the various diſaſters which his ſquadron may ſuffer from different cauſes. His vigilance and preſence of mind are neceſſary to ſeize every favorable opportunity that his ſituation may offer to proſecute his principal deſign; to extricate himſelf from any difficulty or diſtreſs; to check unfortunate events in the beginning, and retard the progreſs of any great calamity. He ſhould be endued with reſolution and fortitude to animate his officers by the force of example, and promote a ſenſe of emulation in thoſe who are under his command, as well to improve any advantage, as to fruſtrate or defeat the efforts of his ill fortune.

The moſt eſſential part of his duty, however, appears to be military conduct. As ſoon as the ſquadron under his command ſhall put to ſea, he is to form it into the proper order of battle, called the Line. In this arrangement he is to make a judicious diſtribution of ſtrength from the van to the rear, throwing the principal force into the centre, to reſiſt the impreſſion of the enemy's fleet; which might otherwiſe, at ſome favorable opportunity, break through his line, and throw the van and rear into confuſion.

A competent knowledge of the ſeas, weather, and reigning winds, of the coaſt or region where he is ſtationed, is alſo requiſite, as it will greatly facilitate his plans on the enemy. It will enable him to avoid being improperly embayed, where he might be ſurpriſed in a diſadvantageous

[a] In regno Saracenorum quatuor prætores ſtatuit, qui admiralli vocabantur. Sigebert.

ſituation; and to judge whether it will be moſt expedient to attack his adverſary, or lie prepared to receive his aſſault. When his ſquadron is forced by ſtreſs of weather, or otherwiſe, to take ſhelter in a road or bay, it will likewiſe ſuggeſt the neceſſary conduct of keeping a ſufficient number of cruiſers at ſea, to bring him early intelligence, that they may be ready to cut or ſlip the cables when they ſhall be too much hurried to weigh their anchors.

As the forming a complete, ſtrong, and uniform line is a very material article in naval war, the admiral ought frequently to arrange the ſquadron under his command into this order, that the inferior officers may obſerve to bring their ſhips, with greater dexterity and alertneſs, into their ſeveral ſtations, and maintain the regularity of the line when they tack, veer, or ſail abreaſt. See LINE.

When the admiral intends a deſcent on an enemy's coaſt, or other attack which may be attended with complicated and unforeſeen incidents, his orders ſhould be delivered or drawn up with the greateſt accuracy and preciſion: they ſhould be ſimple, perſpicuous, direct, and comprehenſive; they ſhould collect a number of objects into one point of view, and, foreſeeing the effects of ſucceſs or defeat, appoint the proper meaſures to be adopted in either event. Hiſtory and experience confirm the neceſſity of this obſervation, and preſent us with a variety of diſaſters that have happened on ſuch occaſions, merely by a deficiency in this material article. In the commanding officer, inattention, barrenneſs of expedient, or a circumſcribed view of the neceſſary effects of his enterprize, may be equally pernicious. And general orders ought to be utterly free from pedantry and perplexity, which always betray a falſe taſte and confuſed imagination, beſides the probability of producing many fatal conſequences.

When an admiral ſhall conquer in battle, he ſhould endeavor to improve his victory, by puſhing the acquired advantages as far as prudence directs; a conduct that merits his attention as much as any in the action! When he ſhall be defeated, he ought to embrace every opportunity of ſaving as many of his ſhips as poſſible, and endeavor principally to aſſiſt thoſe which have been diſabled. In ſhort, it is his duty to avail himſelf of every practicable expedient rather than ſink under his misfortune, and ſuffer himſelf to become an eaſy prey to an enemy.

He ſhould be ſufficiently acquainted with civil law, to judge with propriety of the procedings of courts-martial, and to correct the errors, and reſtrain the abuſes which may happen therein by miſtake, ignorance, or inattention.

As ſecret treaties, propoſitions, or ſchemes of the enemy, may occaſionally be ſubmited to his inſpection, or fall into his poſſeſſion by capture; and which it might be improper to diſcover to any perſon near him, he ought to have a competent knowledge of the modern languages, or at leaſt, thoſe of the countries againſt whom his military operations are directed, to be able to comprehend with facility the full ſcope and purport of ſuch papers.

He

He ought to be well verſed in geometry, ſo as to be capable of ordering proper and correct ſurveys of unknown coaſts, roads, or harbors to be made, and to judge of their accuracy, and detect their errors. To aſcertain the ſituation and longitude of different places, he ſhould be alſo ſufficiently ſkilled in aſtronomy and the method of taking obſervations, which indeed is eſſentially neceſſary to the profeſſion of a ſea-officer, although too much neglected.

By his inſtructions the admiral is likewiſe to aſſiſt at all councils of war that relate to naval affairs: to viſit, as often as convenient, the other ſhips of his ſquadron: to enquire particularly into their condition, and obſerve the men muſtered, taking care that no ſupernumeraries are born on the books. He is directed to acquaint the ſecretary of the admiralty with all his procedings relative to the ſervice, for the information of the lord-high-admiral, or lords commiſſioners of the admiralty; and to attend him, or them, on his return home, with an account of his voyage or expedition, and to deliver a copy of his journal to their ſecretary.

Much more might be obſerved on this occaſion. It appears however by the general outline which we have ſketched, that the office and duty of an admiral requires greater ſkill and more comprehenſive abilities than is generally ſuppoſed neceſſary to the command of a naval armament. And that he ought to be duly qualified, at leaſt in this kingdom, to aſſiſt at the councils of his ſovereign, and enter into the enlarged ſyſtem of protecting his country from an invaſion by ſea, or of meditating a deſcent on an enemy's coaſt; as well as to improve navigation, and open new channels of commerce. For further particulars of his charge ſee the articles ENGAGEMENT, LINE, SQUADRON.

ADMIRAL *of the fleet*, the higheſt officer under the admiralty of Great-Britain: when he embarks on any expedition, he is diſtinguiſhed by the union flag at the main-top-maſt-head.

Vice-ADMIRAL, (*vice-amiral*, Fr.) the officer next in rank and command to the admiral; his flag is diſplayed at the fore-top-maſt-head.

Rear-ADMIRAL, (*contre-amiral*, *lieutenant-general des armées navales*, Fr.) the officer next in rank and command to the vice-admiral, and who carries his flag at the mizen-top-maſt-head.

There are at preſent [b] in England, beſides the admiral of the fleet, three admirals of the white ſquadron, and four of the blue. Three vice-admirals of the red, three of the white, and four of the blue. Four rear admirals of the red, four of the white, and five of the blue ſquadron: beſides twenty-two rear admirals that have carried no flag, who are ſuperannuated upon half-pay.

Vice-ADMIRAL is alſo a civil officer appointed by the lords-commiſſioners of the admiralty. There are ſeveral of theſe officers eſtabliſhed in different parts of Great-Britain, with judges and marſhals under them, for executing juriſdiction within their reſpective diſtricts. Their deciſions, however, are not final, an appeal lying to the court of admiralty in London.

[b] 1769.

ADMIRALTY,

ADMIRALTY, (*Amirauté*, Fr.) the office of lord-high-admiral, whether diſcharged by one ſingle perſon, or by joint-commiſſioners, called Lords of the Admiralty [c].

ADVICE-BOAT, (*paquet d'avis*, Fr.) a ſmall veſſel employed to carry expreſſes or orders with all poſſible diſpatch.

ADRIFT, (from *a* and *drift*, Sax.) the ſtate of a ſhip or veſſel broke looſe from her moorings, and driven without control at the mercy of the wind, ſeas, or current, or all of them together.

AFLOAT, (*à flot*, Fr.) floating on the ſurface of the water: a ſhip is ſaid to be *afloat* when there is a volume of water under her bottom of ſufficient depth to buoy her up from the ground.

AFORE, (*avant*, Fr. *fore*, Sax.) all that part of a ſhip which lies forward, or near the ſtem.

AFORE, as a prepoſition, likewiſe implies *further forward*, or nearer the prow; as, the manger ſtands *afore* the fore-maſt, i. e. further forward, or nearer the ſtem. In both theſe ſenſes *afore* is uſed in contradiſtinction to *abaft*. See the article ABAFT.

AFT, (*arriere*, Fr. from *æfter*, Sax. or *abaft*) behind, or near the ſtern of the ſhip; being oppoſed to *fore*; as, run out the guns *fore and aft!* i. e. from one end of the ſhip to the other; and whence,

AFTER, (*de l'arriere*, Fr. *æfter*, Sax.) a phraſe applied to any object ſituated in the hinder part of the ſhip; as, the *after*-hatchway, the *after*-capſtern, the *after*-ſails, &c.

The AFTER-SAILS uſually comprehend all thoſe which are extended on the mizen-maſt, and on the ſtays between the mizen and main-maſts. They are oppoſed to the head-ſails, which include all thoſe that are ſpread on the fore-maſt and bowſprit; and both, by their mutual operation on the oppoſite ends of the ſhip, duly balance her when under ſail. See the article TRIM.

AGENT-VICTUALLER, (*avitailleur*, Fr.) an officer ſtationed at a royal port, to regulate the victualing of the king's ſhips, under the direction of the commiſſioners for victualing the navy. He receives all the proviſions from the victualing-office in London, and diſtributes them to the ſhips in the harbor. He alſo receives into his ſtore-houſes ſuch as may be returned by ſhips after the expiration of their cruiſe or voyage, and renders an account thereof to the ſaid commiſſioners.

AGROUND, (*echoué*, Fr. from *a* and *ground*, Sax.) the ſituation of a ſhip whoſe bottom, or any part of it, hangs or reſts upon the ground, ſo as to render her immoveable till a greater quantity of water ſhall float her off; or till ſhe ſhall be drawn out into the ſtream, by the application of mechanical powers.

[c] This important and high office has ſeldom been entruſted to any ſingle perſon, except princes of the blood; or to ſome nobleman meriting ſuch diſtinction for his eminent ſervices. In general the crown appoints five or ſeven commiſſioners, under the title of "*Lords* "*Commiſſioners for executing the Office of Lord-High-Admiral of Great-Britain*," &c. All maritime affairs are entruſted to their juriſdiction. They govern and direct the whole royal navy, with power deciſive in all marine caſes, civil, military, and criminal, tranſacted upon or beyond ſea, in harbors, on coaſts, and upon all rivers below the firſt bridge ſea-ward.

AHEAD,

AHEAD, (*avant*, *au devant*, Fr. from *a* and *head*, Sax.) further onward than the ſhip, or at any diſtance before her, lying immediately on that point of the compaſs to which her ſtem is directed. It is uſed in oppoſition to *aſtern*, which expreſſes the ſituation of any object behind the ſhip. See ASTERN.

To run AHEAD *of one's reckoning*, (*depaſſer*, Fr.) to ſail beyond the place ſhewn erroneouſly in the dead-reckoning as the ſhip's ſtation.

Line AHEAD. See the article LINE.

A-HULL, (*à ſec*, *à mâts*, *& à cordes*, Fr. from *a* and *hull*) the ſituation of a ſhip when all her ſails are furled on account of the violence of the ſtorm, and, when having laſhed her helm on the lee-ſide, ſhe lies nearly with her ſide to the wind and ſea, her head being ſomewhat inclined to the direction of the wind. See this further explained in the article TRYING.

AIM, the direction of a cannon, or other fire-arm, to its object, or the point to which it is directed; whence,

To take AIM, (*prendre ſa mire*, from *eſmer*, Fr.) is to point a gun to it's object according to the point-blank range. See CANNON and RANGE.

ALEE, (*envoié*, Fr. from *a* and *lee*) the ſituation of the helm when it is puſhed down to the lee ſide of the ſhip, in order to put the ſhip about, or to lay her head to the windward.

ALL *in the wind*, the ſtate of a ſhip's ſails when they are parallel to the direction of the wind, ſo as to ſhake and ſhiver, by turning the ſhip's head to windward, either by deſign, or neglect of the helm's man.

ALL*'s well!* an acclamation of ſafety or ſecurity pronounced by a centinel, and repeated by all the others who are ſtationed in different places of a ſhip of war, at the time of ſtriking the bell each half-hour during the period of the night watch.

ALL *hands high*, or ALL *hands hoay!* (*tout le monde haut!* Fr.) the call or order by which all the ſhip's company are ſummoned upon deck by the boatſwain.

ALOFT, (*en haut*, Fr. *loffter*, to lift up, Dan.) up in the tops, at the maſt-heads, or any where about the higher yards or riging.

ALONG-*ſide*, (*bord à bord*, *flanc & flanc*, Fr.) ſide by ſide, or joined to a ſhip, wharf, &c. and lying parallel thereto.

To lay ALONG-*ſide*, (*allonger*, Fr.) to arrange a ſhip by the ſide of another.

ALONG-*ſhore*, along the coaſt; this phraſe is commonly applied to coaſting navigation, or to a courſe which is in ſight of, and nearly parallel to, the ſhore.

Lying ALONG, (*à la bande*, *au long*, Fr.) the ſtate of being preſſed down ſideways by a weight of ſail in a freſh wind that croſſes the ſhip's courſe either directly or obliquely.

ALOOF, (*lof*, Fr.) this has frequently been mentioned as a ſea-term, but whether juſtly or not we ſhall not preſume to determine; it is known in common diſcourſe to imply *at a diſtance*; and the reſemblance of the phraſes, *keep aloof*, and *keep a luff*, or *keep the luff*, in all probability gave riſe to this conjecture. If it was really a ſea-phraſe originally, it ſeems to have refered to the dangers of a lee-ſhore, in which ſituation the pilot might

might naturally apply it in the ſenſe commonly underſtood, *viz.* keep *all off*, or quite off: it is, however, never expreſſed in that manner by ſeamen now. See LUFF. It may not be improper to obſerve, that, beſides uſing this phraſe in the ſame ſenſe with us, the French alſo call the weather ſide of a ſhip, and the weather clue of a courſe, *le lof*.

AMAIN, (*cale-tout*, Fr. from *main*, or *meigne*, old French) at once, ſuddenly; as, let go *amain!* i. e. let it run at once. This phraſe is generally applied to any thing that is hoiſted or lowered by a tackle, or complication of pullies.

AMAIN, yield, from a ſhip of war to an enemy.

Strike AMAIN, lower your topſails.

AMIDSHIPS, the middle of the ſhip, either with regard to her length or breadth. Example in the firſt ſenſe; The enemy boarded us *amidſhips*, i. e. in the middle, between the ſtem and ſtern. Example in the ſecond ſenſe; Put the helm *amidſhips*, i. e. in the middle, between the two ſides.

ANCHOR, (*ancre*, Fr. *anchora*, Lat. from αγκυρα, Greek) a heavy, ſtrong, crooked inſtrument of iron, droped from a ſhip into the bottom of the water, to retain her in a convenient ſtation in a harbor, road, or river.

The moſt ancient anchors are ſaid to have been of ſtone, and ſometimes of wood, to which a great quantity of lead was uſually fixed. In ſome places baſkets full of ſtones, and ſacks filled with ſand, were employed for the ſame uſe. All theſe were let down by cords into the ſea, and by their weight ſtayed the courſe of the ſhip. Afterwards they were compoſed of iron, and furniſhed with teeth, which, being faſtened to the bottom of the ſea, preſerved the veſſel immoveable; whence ὀδόντες and *dentes* are frequently taken for anchors in the Greek and Latin poets. At firſt there was only one tooth, whence anchors were called ἑτερόσομοι; but in a ſhort time the ſecond was added by Eupalamus, or Anacharſis, the Scythian philoſopher. The anchors with two teeth were called ἀμφίβολοι, or ἀμφίσομοι, and from ancient monuments appear to have been much the ſame with thoſe uſed in our days, only the tranſverſe piece of wood upon their handles (the ſtocks) is wanting in all of them. Every ſhip had ſeveral anchors, one of which, ſurpaſſing all the reſt in bigneſs and ſtrength, was peculiarly termed ἱερά, or *ſacra*, and was never uſed but in extreme danger; whence *ſacram anchoram ſolvere* is proverbially applied to ſuch as are forced to their laſt refuge. *Potter's Antiquities of Greece.*

The anchors now made are contrived ſo as to ſink into the ground as ſoon as they reach it, and to hold a great ſtrain before they can be looſened or diſlodged from their ſtation. They are compoſed of a ſhank, a ſtock, a ring, and two arms with their flukes. The ſtock, which is a long piece of timber fixed acroſs the ſhank, ſerves to guide the flukes in a direction perpendicular to the ſurface of the ground; ſo that one of them ſinks into it by its own weight as ſoon as it falls, and is ſtill preſerved ſteadily in that poſition by the ſtock, which, together with the ſhank, lies flat on the bottom. In this ſituation it muſt neceſſarily ſuſtain a great effort before it can be draged through the earth horizontally. Indeed this can only be effected by the violence of the wind or tide, or of both of them, ſometimes increaſed

by the turbulence of the ſea, and acting upon the ſhip ſo as to ſtretch the cable to it's utmoſt tenſion, which accordingly may diſlodge the anchor from it's bed, eſpecially if the ground be ſoft and oozy or rocky. When the anchor is thus diſplaced, it is ſaid, in the ſea phraſe, to *come home*.

That the figure of this uſeful inſtrument may be more clearly underſtood, let us ſuppoſe a long maſſy beam of iron erected perpendicularly, Plate I. fig. 2. *b c*; at the lower end of which are two arms, *d e*, of equal thickneſs with the beam (uſually called the ſhank) only that they taper towards the points, which are elevated above the horizontal plane at an angle of thirty degrees; or inclined to the ſhank at an angle of ſixty degrees: on the upper part of each arm (in this poſition) is a fluke, or thick plate of iron, *g h*, commonly ſhaped like an iſoſceles triangle, whoſe baſe reaches inwards to the middle of the arm. On the upper end of the ſhank is fixed the ſtock tranſverſely with the flukes: the ſtock is a long beam of oak, *f*, in two parts, ſtrongly bolted, and hooped together with iron rings. See alſo fig. 3. Cloſe above the ſtock is the ring, *a*, to which the cable is faſtened, or *bent*: the ring is curiouſly covered with a number of pieces of ſhort rope, which are twiſted about it ſo as to form a very thick texture or covering, called the puddening, and uſed to preſerve the cable from being fretted or chafed by the iron.

Every ſhip has, or ought to have, three principal anchors, with a cable to each, viz. the ſheet, *maitreſſe-ancre*, (which is the *anchora ſacra* of the ancients) the beſt bower, *ſecond ancre*, and ſmall bower, *ancre d'affourche*, ſo called from their uſual ſituation on the ſhip's bows. There are beſides ſmaller anchors, for removing a ſhip from place to place in a harbour or river, where there may not be room or wind for ſailing; theſe are the ſtream-anchor, *ancre de touë*; the kedge and grappling, *grapin*: this laſt, however, is chiefly deſigned for boats.

To drag the Anchors, (*chaſſer ſur ſes ancres*, Fr.) implies the effort of making the anchor *come home*, when the violence of the wind, &c. ſtrains the cable ſo as to tear it up from the bed into which it had ſunk, and drag it along the ground; as already explained.

Foul Anchor: it is ſo called when it either hooks ſome other anchor, wreck, or cable, under the ſurface of the water; or when, by the wind ſuddenly abating, the ſhip ſlackens her ſtrain, and ſtraying round the bed of her anchor entangles her ſlack cable about the upper fluke of it, and eaſily draws it out of it's place, as ſoon as ſhe begins to ride with a ſtrain. To prevent this, it is uſual, as ſhe approaches the anchor, in light winds, to draw the ſlack cable into the ſhip as faſt as poſſible.

To Anchor, (*ancrer*, *moüiller*, &c. Fr.) is to let go the anchor, and to let the ſhip ride thereby.

The Anchor *is a cock-bill*, (*ancre eſt à la veille*, Fr.) implies that the ſhank-painter, or rope by which the flukes were hung to the ſhip's bow, being caſt off, the flukes drop down perpendicularly; whilſt the anchor is ſuſpended at the cat-head by its ſtopper, ready to be ſunk from the bow at a moment's warning.

At Anchor, (*à l'ancre*, Fr.) the ſituation of a ſhip which rides by her anchor in a road or haven, &c. Plate I. fig. 6. repreſents the fore-part of a ſhip, as riding in this ſituation.

The Anchor *is a-peek*. See the article Apeek.

The Anchor *is a-trip*, or *a-weigh*. See thoſe articles.

To back the Anchor. See Back.

To cat the Anchor, (*capomer l'ancre*, Fr.) is to hook a tackle called the *cat* to it's ring, and thereby pull it up cloſe to the cat-head; which ſee.

To fiſh the Anchor, to draw up the flukes upon the ſhip's ſide after it is catted. See the articles Davit and Fish.

To ſheer the ſhip to her Anchor, (*gouverner ſur l'ancre*, Fr.) is to ſteer the ſhip's head towards the place where the anchor lies when they are heaving the cable into the ſhip; that the cable may thereby enter the hawſe with leſs reſiſtance, and the ſhip advance towards the anchor with greater facility.

To ſhoe the Anchor, See the article Shoe.

To weigh the Anchor, (*lever l'ancre*, Fr.) to heave the anchor out of the ground by it's cable. See Capstern and Windlass.

To weigh the Anchor *with the long-boat*, (*lever l'ancre avec la chaloupe*, Fr.) is to draw it up by applying mechanical powers to the buoy-rope, and thereby pulling it up to the boat's ſtem or ſtern.

To weigh the Anchor *by the hair*, is to weigh it by the cable in a boat, when the ſhip cannot approach it, or when the buoy-rope is broke. See the French term *Ancre*, and the phraſes which ſucceed in order.

Anchor-*ground*, (*fond de bonne tenüe*, Fr.) is a bottom which is neither too deep, too ſhallow, nor rocky; as in the firſt the cable bears too nearly perpendicular, and is thereby apt to jerk the anchor out of the ground: in the ſecond, the ſhip's bottom is apt to ſtrike at low water, or when the ſea runs high, by which ſhe is expoſed to the danger of ſinking: and in the third, the anchor is liable to hook the broken and pointed ends of rocks, and tear away it's flukes; whilſt the cable, from the ſame cauſe, is conſtantly in danger of being cut through as it rubs on their edges.

AN-END, (*debout*, Fr.) the ſituation of any maſt or boom, when erected perpendicularly on the plane of the deck, tops, &c. The top-maſts are alſo ſaid to be an-end when they are hoiſted up to their uſual ſtation, at the head of the lower maſts, as in fig. 3, Plate VI.

APEEK, (*à pique*, Fr.) perpendicular to the anchor; a ſhip is ſaid to be in this ſituation, when the cable is drawn ſo tight into the bow as to bring her directly over the anchor, ſo that the cable bears right down from the ſhip's ſtem.

APRON, (from *a* and *foram*, Sax.) a platform, or flooring of plank, raiſed at the entrance of a dock, a little higher than the bottom, againſt which the dock gates are ſhut. See the article Dock.

Apron, (*contre étrave*, Fr.) in ſhip-building, a piece of curved timber fixed behind the lower part of the ſtem, immediately above the foremoſt end of the keel. See plate I. fig. H. in the Pieces *of the* Hull.

The Apron conforms exactly to the ſhape of the ſtem, ſo that when the convexity of the former is applied to the concavity of the latter, it forms

one ſolid piece, which ſerves to fortify the ſtem, and give it a firmer connexion with the keel.

As the apron is compoſed of two pieces ſcarfed together, and uſed to ſupport the ſcarf of the ſtem, it is neceſſary that the ſcarf thereof ſhould be at ſome diſtance from that of the ſtem. It is formed of the ſame thickneſs with the heel of the ſtem; but it's thickneſs is equal throughout. Sometimes the piece immediately under the apron forms a curve, of which the horizontal part covers the dead-wood, whilſt the vertical part correſponds with the inſide of the ſtem, to which it is fayed, making the commencement of the apron.

Apron, (*platine de lumiere*, Fr.) is alſo a ſquare piece of lead faſtened over the touch-hole of the cannon, to keep the charge dry at ſea, or in rainy weather.

Naval ARCHITECTURE, or the ſcience of ſhip-building, comprehends the theory of delineating marine veſſels upon a plane; and the art of framing them upon the ſtocks, according to the proportions exhibited in a regular deſign.

All edifices, whether civil or military, are known to be erected in conſequence of certain eſtabliſhed plans, which have been previouſly altered or improved till they have arrived at the deſired point of perfection. The conſtruction of ſhips appears alſo to require at leaſt as much correctneſs and preciſion as the buildings which are founded upon *terra firma:* it is therefore abſolutely neceſſary that the mechanical ſkill of the ſhipwright ſhould be aſſiſted by plans and ſections, which have been drawn with all poſſible exactneſs, examined by proper calculations, and ſubmitted to the moſt accurate ſcrutiny.

Naval Architecture, or ſhip-building, may be diſtinguiſhed into three principal parts.

Firſt, To give the ſhip ſuch an exterior form as may be moſt ſuitable to the ſervice for which ſhe is deſigned.

Secondly, To give the various pieces of a ſhip their proper figures; to aſſemble and unite them into a firm, compact frame, ſo that by their combination and diſpoſition they may form a ſolid fabric, ſufficient to anſwer all the purpoſes for which it is intended. And,

Thirdly, To provide convenient accommodations for the officers and crew, as well as ſuitable apartments for the cargo, furniture, proviſions, artillery and ammunition.

The exterior figure of a ſhip may be divided into the bottom and upper-works.

The bottom, or quick-work, contains what is termed the *hold*, and which is under water when the ſhip is laden. The upper-works, called alſo the dead-work, comprehend all that part which is uſually above the water when the ſhip is laden.

The figure of the bottom is therefore determined by the qualities which are neceſſary for the veſſel, and conformable to the ſervice for which ſhe is propoſed.

The limits of our deſign will not admit of a minute deſcription and enumeration of all the pieces of timber which enter into the conſtruction of a ſhip, nor of a particular deſcription of their aſſemblage and union; or the manner in which they reciprocally contribute to the ſolidity of thoſe floating citadels. It nevertheleſs appears neceſſary to give a general idea of the uſe, figure, and ſtation of the principal pieces, to thoſe who are entirely unacquainted with the ſubject. As our definitions will be greatly illuſtrated alſo by the proper figures, we have annexed to this article a plate which comprehends ſome of the moſt material draughts, as well as a repreſentation of the principal pieces employed in naval architecture.

It is uſual among ſhipwrights to delineate three ſeveral draughts.

Firſt, The whole length of the ſhip is repreſented according to a ſide-view, perpendicular to the keel, and is termed the plane of elevation, or ſheer-draught. Plate I.

Second, The ſhip is exhibited according to an end view, and ſtripped of her planks, ſo as to preſent the outlines of the principal timbers; and this is properly termed the plane of projection, or the vertical plane of the timbers, plate I. becauſe it ſhews the projection of their frames relatively to each other.

Third, It is not ſufficient to have the vertical curves of the bottom in different places, for a diſtinct idea of the horizontal curves is alſo equally neceſſary and uſeful: this is obtained by means of *water-lines*, traced upon what is called the horizontal plane. In this draught, the curves of the tranſoms called the *round-aft*, is alſo marked, and ſometimes the breadth and thickneſs of the timbers.

The plane of elevation, plate I. determines the length and depth of the keel; the difference of the draughts of water; the length and projection, or *rake*, of the ſtem and ſtern-poſt; the poſition of the mid-ſhip frame upon the keel, together with that of the principal frames afore and abaft; the load-water line; the wales, the dimenſions and ſituations of the gun-ports, the projection of the rails of the head and ſtern-gallery, with the ſtations of the maſts and channels.

This draught, however, conveys no idea of the vertical curve of the ribs or timbers; for as their projection will be only repreſented in a plane elevated upon the length of the keel, they will appear in this direction no otherwiſe than as ſtraight lines. To perceive theſe curves accurately, they muſt be regarded in another point of view, which will repreſent their projection upon a vertical plane, ſuppoſed to cut the keel at right angles in the place where the ſhip is broadeſt. For as all ſhips are broader near the middle of their length than towards the extremities, it is evident that the timbers are more extended in proportion. The moſt capacious of theſe repreſents what is called the *midſhip-frame*; and upon the area of this frame is delineated the projection of all the others.

Thus the plane of projection limits the different breadths of a ſhip in various points of her length, and exhibits the outline of the timbers reſpectively to each other, as they are erected upon the keel. Accordingly, this draught ought to preſent a variety of ſections of the ſhip in different places of her length, and always perpendicular to the ſurface of the water; ſo

ſo that the eye of the obſerver, when placed in what may be properly termed the *axis* of the ſhip, may perceive the ſeveral ſections at one glance; that is to ſay, when looking full on the ſtem, from before the ſhip, (ſee plate IV. fig. 11.) he ſhall diſcover the fore-timbers; and when looking from behind, directly on the ſtern, he ſhall perceive the form of the after-timbers, (ſee plate X. fig. 2. and 3.) in both of which figures the ſections of the inferior timbers are expreſſed by curved black lines drawn upon the area of the midſhip-frame, which is already deſcribed to be a plane elevated perpendicularly upon the keel at the extreme breadth of the veſſel.

To form a juſt idea of this plane, therefore, we ought to ſuppoſe a ſhip reſting upon the ſtocks, in the ſame poſition as when afloat upon the water. Thus a variety of black vertical lines may be drawn at equal diſtances upon the bottom, which is white, to form different outlines of the ſhip correſponding to the timbers within. It is to be obſerved, that the faſhion of the inferior timbers muſt conform to the figure of the midſhip-frame, which is placed in the fulleſt part of the ſhip; and as the planes of all the other timbers diminiſh in a certain progreſſion as they approach the ſtem and ſtern, they are properly delineated on the plane of the midſhip-frame, which alſo repreſents the depth of the keel and length of the midſhip-beam.

As the two ſides of a ſhip ought to be exactly alike, it is judged ſufficient to repreſent the ſections of the fore-part of the ſhip on the left ſide, and thoſe in the after-part on the right ſide, ſo as to perceive all the ſections, as well afore as abaft, upon one plane. See plate I. PROJECTION.

However neceſſary it may be to underſtand preciſely the vertical curves of the bottom, it is no leſs requiſite to have a juſt idea of thoſe which are horizontal.

The horizontal, or floor plane, is that upon which the whole frame is erected, and will be more clearly underſtood by previouſly deſcribing the water-lines and ribbands, of which it is compoſed.

When a ſhip floats upon the ſtream, it is evident that her upper-works will be ſeparated from the bottom by the ſurface of the water, which will accordingly deſcribe an imaginary horizontal line upon the bottom from the ſtem to the ſtern-poſt.

The moſt elevated of thoſe lines is termed the load-water line, which is ſuppoſed to be drawn by the ſurface of the water on the upper part of the bottom, when ſhe is ſufficiently laden for a ſea-voyage. For if we ſuppoſe this ſurface a rule, and thereby deſcribe a correſponding black line along the veſſel's bottom, that line will be diſtinguiſhed upon the bottom, which is white, and repreſent what is called the load-water line.

If the ſhip is lightened of any part of her lading, and preſerves the ſame difference in her draught of water at the two ends, or, what is the ſame thing, if ſhe is lightened ſo as to preſerve the ſame equilibrium of the keel with regard to the ſurface of the water, it is evident that ſhe will riſe higher out of the water, ſo that the black line already deſcribed will be elevated above it, and another black line may be delineated upon the bottom, cloſe to the ſurface of the water, which will exhibit a ſecond water-line parallel

to

to the firſt, but nearer the keel in proportion to the number of feet which the ſhip has riſen.

Thus by lightening a ſhip gradually, and at the ſame time preſerving the direction of her keel, or the angle which the keel makes with the ſurface of the water, a variety of water-lines may be drawn parallel to each other, and to the load-water line. See a further illuſtration of theſe lines in the article WATER-LINE. See alſo their figure on a ſhip's bottom, plate I. fig. 5.

The ribbands are likewiſe of great utility in ſhip-building; they are narrow and flexible planks placed on the bottom at different heighths, ſo as to form a ſort of mould for ſtationing the inferior timbers between the principal ones. They differ from the water-lines, inaſmuch as the latter have only one curve, which is horizontal, whereas the ribbands, beſides their horizontal one, have a vertical curve. To convey a juſt idea of theſe curves, which cannot be repreſented on one draught at their full length, without an oblique ſection of the ſhip's length, it will be neceſſary to have recourſe to two planes; that of the elevation, which exhibits their vertical curve; and to the floor-plane, upon which the horizontal curve is expreſſed. See RIBBANDS.

Theſe different lines are extremely uſeful in exhibiting the various curves of a ſhip's bottom, that as they are gradually diminiſhed, their uniformity or irregularity may be diſcovered by the ſkilful artiſt.

We have already obſerved, that the qualities required in a ſhip ought to determine the figure of the bottom: a ſhip of war therefore ſhould be able to ſail ſwiftly, and carry her lower tier of guns ſufficiently out of the water. A merchant-ſhip ought to contain a large cargo of merchant-goods, and be navigated with few hands; and both ſhould be able to carry ſail firmly; ſteer well; drive little to leeward; and ſuſtain the ſhocks of the ſea without being violently ſtrained.

The firſt thing to be eſtabliſhed in the draught of a ſhip is her length; and as a ſhip of war, according to her rate, is furniſhed with a certain number of cannon, which are placed in battery on her decks, it is neceſſary that a ſufficient diſtance ſhould be left between the ports to work the guns with facility, and particularly to leave ſpace enough between the foremoſt gun and the ſtem, and between the aftmoſt gun and the ſtern-poſt on each ſide, on account of the arching, or inward curve of the ſhip towards her extremities.

When the length of a ſhip is determined, it is uſual to fix her breadth by the dimenſions of the midſhip-beam. On this occaſion the ſhipwrights, for the moſt part, are conducted by rules founded on their own obſervation; for having remarked, that ſome veſſels, which by repeated experience have been found to anſwer all the purpoſes of navigation, have a certain breadth in proportion to their length, they have inferred that it would be improper to depart from this proportion: but as other ſhips have been conſtructed with different breadths, which were equally perfect, a variety of different general rules have been adopted by theſe artiſts, who are accordingly divided in their opinions about the breadth which ought to be aſſigned to a ſhip relatively with her length, whilſt each

one

one produces reaſons and experience in ſupport of his own ſtandard. Thoſe who would diminiſh the breadth allege, that a narrow veſſel meets with leſs reſiſtance in paſſing through the water; 2dly, That by increaſing the length ſhe will drive leſs to leeward; 3dly, That according to this principle, the water-lines will be more conveniently formed to divide the fluid; 4thly, That a long and narrow ſhip will require leſs ſail to advance ſwiftly; that her maſts will be lower, and her rigging lighter; and, by conſequence, the ſeamen leſs fatigued with managing the ſails, &c.

Thoſe, on the contrary, who would enlarge the breadth, pretend, 1ſt, That this form is better fitted to receive a good battery of guns; 2dly, That there will be more room to work the guns conveniently; 3dly, That by carrying more ſail, the ſhip will be enabled to run faſter; or, that this quality will at leaſt overbalance the advantage which the others have of more eaſily dividing the fluid; 4thly, That, being broader at the load-water line, or place where the ſurface of the water deſcribes a line round the bottom, they will admit of being very narrow on the floor, particularly towards the extremities; and, 5thly, That a broad veſſel will more readily riſe upon the waves than a narrow one.

From ſuch oppoſite principles has reſulted that variety of ſtandards adopted by different ſhipwrights; and a ſervile imitation of theſe mechanical methods has, to the great reproach of the art, produced all theſe pretended rules of proportion: for the various models they have hitherto adopted indiſputably prove their doubt and uncertainty with regard to their proper ſtandard. Hence theſe pretended myſteries which are only to be revealed to ſuch as are initiated into the craft! Hence this diviſion of the art into claſſes, or, according to the technical term, into *families*, each of which affects, with becoming ſolemnity, to be poſſeſſed of the true ſecret, in preference to all the others! And hence violence of oppoſition, and mutual contempt amongſt the artiſts! Indeed nothing appears more effectually to have retarded the progreſs of naval architecture, than the involving it in myſteries which the profeſſors would gravely inſinuate are only intelligible to themſelves. This ridiculous affectation is nevertheleſs tenaciouſly retained, notwithſtanding the example to the contrary of ſome of the moſt able ſhipwrights in Europe, who are real maſters of the theory of their art, and do honour to their profeſſion, and who are juſtly exempted from the cenſure to which the others are often expoſed.

It is not to be expected that an art ſo complicated and various, comprehending ſuch a diverſity of ſtructures, can be treated at large in a work of this ſort. To enter into a particular detail of the theory and practice; to explain the different parts with ſufficient accuracy and perſpicuity, would of itſelf require a large volume, and, by conſequence, greatly exceed the limits of our deſign. Being thus neceſſitated to contract our deſcription into a narrow compaſs, it will be ſufficient to give a general idea of the ſubject; to deſcribe the principal pieces of which a ſhip is compoſed, and to explain the principal draughts uſed in the conſtruction thereof.

Ar

As the ſeveral lines exhibited in the planes of elevation, projection, &c. will be rendered more intelligible by a previous account of thoſe pieces, it may not be improper to begin with reciting their names, and giving a ſummary deſcription of their uſes and ſtations. They are for the moſt part repreſented according to the order of their diſpoſition in that part of plate I. which is termed PIECES *of the* HULL.

A. The pieces which compoſe the keel, to be ſecurely bolted together, and clinched.

B. The ſtern-poſt, which is tenented into the keel, and connected to it by a knee, G. It ſupports the rudder, and unites the ſides of the ſhip abaft.

C. The ſtem, which is compoſed of two pieces ſcarfed together: it is an arching piece of timber, into which the ſhip's ſides are united forwards

D. The beams, which are uſed to ſupport the decks, and confine the ſides to their proper diſtance.

E. The falſe poſt, which ſerves to augment the breadth of the ſtern-poſt, being alſo tenented into the keel.

F. The knees, which connect the beams to the ſides.

G. The knee of the ſtern-poſt, which unites it to the keel.

H. The apron, in two pieces: it is fayed on the inſide of the ſtem, to ſupport the ſcarf thereof; for which reaſon, the ſcarf of the former muſt be at ſome diſtance from that of the latter.

I. The ſtemſon, in two pieces, to reinforce the ſcarf of the apron.

K. The wing tranſom: it is fayed acroſs the ſtern-poſt, and bolted to the head of it, having it's two ends let into the faſhion-pieces.

L. The deck-tranſom, parallel to the wing-tranſom, and ſecured in the ſame manner.

M. N. The lower tranſoms.

O. The faſhion-piece on one ſide; the heel of it is connected with the dead-wood, and the head is ſecured to the wing-tranſom.

P. The top-timbers, or upper parts of the faſhion-pieces.

Q. The knees, which faſhion the tranſoms to the ſhip's ſide.

R. The breaſt-hooks, in the hold; they are fayed acroſs the ſtem, to ſtrengthen the fore-part of the ſhip.

S. The breaſt-hooks of the deck: they are placed immediately above the former, and uſed for the ſame purpoſes.

T. The rudder, which is joined to the ſtern-poſt by hinges, and ſerves to direct the ſhip's courſe.

U. The floor timbers; they are laid acroſs the keel, to which they are firmly bolted.

V. The lower futtocs, and

W. The top-timbers, which are all united to the floor-timbers, forming a frame that reaches from the keel to the top of the ſide.

X. The pieces which compoſe the kelſon: they are ſcarfed together like the keel pieces, and placed over the middle of the floor-timbers,

upon each of which they are ſcored about an inch and a half, as exhibited by the notches.

Y. The ſeveral pieces of the knee of the head; the lower part of which is fayed to the ſtem; the heel being ſcarfed to the fore-foot.

Z. The cheeks of the head or knees, which connect the head to the bows on each ſide.

&. The ſtandard of the head which faſtens it to the ſtem.

a. The catheads, one of which lies on each bow, projecting outwards like the arm of a crane. They are uſed to draw the anchors up to the top of the ſide without injuring the bow.

b. The bits, to which the cable is faſtened when the ſhip rides at anchor.

c. The falſe poſt, in two pieces, fayed to the fore part of the ſtern-poſt.

d. The ſide-counter-timbers, which terminate the ſhip abaft within the quarter-gallery.

e e. Two pieces of dead wood, one afore, and another abaft, fayed on the keel.

In veſſels of war, the general dimenſions are eſtabliſhed by authority of officers appointed by the government to ſuperintend the building of ſhips. In the merchants ſervice, the extreme breadth, length of the keel, depth in the hold, heighth between-decks and in the waiſt, are agreed on by contract; and from theſe dimenſions the ſhipwright is to form a draught ſuitable to the trade for which the ſhip is deſigned.

In projecting the draught of a veſſel of war, the firſt article to be conſidered is her length. As all ſhips are much longer above than below, it is alſo neceſſary to diſtinguiſh the preciſe part of her heighth, from which her length is taken: this is uſually the lower gun-deck, or the load water-line. It has been already obſerved, that water-lines are deſcribed longitudinally on a ſhip's bottom by the ſurface of the water in which ſhe floats, and that the line which determines her depth under the water is uſually termed the load-water-line. In this draught it will be particularly neceſſary to leave ſufficient diſtance between the ports.

The next object is to eſtabliſh the breadth by the midſhip-beam. Although there is great difference of opinion about proportioning the breadth to the length, yet it is moſt uſual to conform to the dimenſions of ſhips of the ſame rate. After the dimenſions of the breadth and length are determined, the depth of the hold muſt be fixed, which is generally half the breadth: but the form of the body ſhould be conſidered on this occaſion; for a flat floor will require leſs depth in the hold than a ſharp one. The diſtance between the decks muſt alſo be ſettled.

We may then proceed to fix the length of the keel, by which we ſhall be enabled to judge of the rake of the ſtem and ſtern-poſt. The rake is known to be the projection of the ſhip at the heighth of the ſtem and ſtern-poſt, beyond the ends of the keel afore and abaft; or the angle by

which the length is increaſed as the fabric riſes. To theſe we may alſo add the heighth of the ſtem and wing-tranſom.

After theſe dimenſions are ſettled, may be conſidered the timbers which form the ſides of the ſhip. A frame of timbers, which appears to be one continued piece, is compoſed of one floor-timber, U, whoſe arms branch outward to both ſides of the ſhip: (See plate I. PIECES *of the* HULL) two or three futtocks, V V, and a top-timber, W. The futtocks are connected to the upper arms of the floor-timbers on each ſide of the ſhip, and ſerve to prolong the timber in a vertical direction: and the top-timbers are placed at the upper part of the futtocks for the ſame purpoſe. All theſe being united, and ſecured by croſs-bars, form a circular incloſure, which is called a frame of timbers, (*couple d'un vaiſſeau*, Fr.) And as a ſhip is much broader at the middle than at the extremities, the arms of the floor-timber will form a very obtuſe angle at the extreme breadth; but this angle decreaſes in proportion to the diſtance of the timbers from the midſhip-frame, ſo that the foremoſt and aftmoſt ones will form a very acute angle. Floor-timbers of the latter ſort are uſually called crutches.

Shipwrights differ extremely in determining the ſtation of the midſhip-frame; ſome placing it at the middle of the ſhip's length, and others further forward. They who place it before the middle alledge, that if a ſhip is full forward, ſhe will meet with no reſiſtance after ſhe has opened a column of water; and that the water ſo diſplaced will eaſily unite abaft, and by that means force the ſhip forward; beſides having more power on the rudder, in proportion to it's diſtance from the centre of gravity: this alſo comes nearer the form of fiſhes, which ſhould ſeem the moſt advantageous for dividing the fluid.

When the riſing of the midſhip-floor-timber is decided, we may then proceed to deſcribe the riſing-line of the floor, on the ſtern-poſt abaft, and on the ſtem afore.

The heighth of the lower-deck is the next thing to be conſidered. It is determined in the middle by the depth of the hold; and ſome builders make it no higher than the ſtem; but they raiſe it abaft as much above it's heighth in the middle as the load-water-mark, or draught of water abaft, exceeds that afore. With regard to the heighth between decks, it is altogether arbitrary, and muſt be determined by the rate of the ſhip, and the ſervice ſhe is deſigned for.

It is alſo neceſſary to remember the ſheer of the wales, and to give them a proper *hanging*; becauſe the beauty and ſtatelineſs of a ſhip greatly depend upon their figure and curve, which, if properly drawn, will make her appear airy and graceful on the water.

We come now to conſider the upper-works, and all that is above water, called the dead-work: and here the ſhip muſt be narrower, ſo that all the weight lying above the load-water-line may thereby be brought nearer the middle of the breadth, when of courſe the ſhip will be leſs ſtrained by the working of her guns, &c. But although ſome advantages are acquired by diminiſhing the breadth above water, we muſt be careful not to narrow her too much; as there muſt be ſufficient room left on the upper-

upper-deck for the guns to recoil. The ſecurity of the maſts ſhould likewiſe be remembered, which requires ſufficient breadth to ſpread the ſhrouds. A deficiency of this ſort may indeed be in ſome meaſure ſupplied by enlarging the breadth of the channels.

With regard to the qualities required in the conſtruction of a ſhip, to fit her out for the various purpoſes of navigation, the reader is referred to the article Bottom.

We ſhall now proceed to explain the ſheer draught, or plane of *elevation*, of a ſixty-gun ſhip; wherein we have been attentive to make the ſame letters refer to the ſame objects, as in the explanation of the Pieces, as above; at leaſt when the ſame objects are in both figures. This conduct we ſhall invariably purſue throughout this work, although it ſeems to have been forgot by our predeceſſors. Thus in all the plates of ſhip-building, the keel, whether ſeparate or joined, is repreſented by A, the ſtern-poſt by B, the ſtem by C, the beams by D; unleſs where thoſe objects do not *all* appear, and then ſomething elſe is placed inſtead thereof. Thus in plate III. of the deck, where the keel cannot be ſeen, the main hatchway is repreſented by A, as not being inſerted in any figure wherein the keel appears.

A A. The keel, whoſe upper edge is prolonged by the dotted line p q, upon the extremities of which are erected perpendiculars which determine the heighth of the wing-tranſom, K, the length of the gun-deck, K C.

A B. The ſtern-poſt.

A C. The ſtem.

D D. The quarter-gallery, with it's windows.

E F. The quarter-pieces, which limit the ſtern on each ſide.

F. The taffarel, or upper piece of the ſtern.

F G. Profile of the ſtern, with it's galleries.

H. The gun ports.

I. The channels, with their dead-eyes and chain-plates.

K. The wing-tranſom.

K G. The counter.

L B. The deck-tranſom.

M N O. The firſt, ſecond, and third tranſoms, of which O *k* is the third or loweſt.

m O L P. The direction of the faſhion-piece, having it's breadth canted aft towards the ſtern.

Q R. The main ſkeeds, for hoiſting in the boats clear of the ſhip's ſide.

L Q Z. The main wale, with it's ſheer afore and abaft.

D R X. The channel wales, parallel to the main wale.

S U S. The ſheer rail, parallel to the wales.

T *t*. The rudder.

A t F. The rake of the ſtern.

V W V. The waiſt-rail.

P *i i*. The driſt-rails abaft; and *i* a, the drift-rails forward.

T U C. The water-line.

X X. The rails of the head.

Y. The knee of the head, or cutwater.

Z Z. The cheeks of the head.

a a. The cat-head.

M ⊕ C. The riſing line of the floor.

k u C. The cutting-down line, which limits the thickneſs of all the floor-timbers, and likewiſe the heighth of the dead-wood afore and abaft.

⊕ *u* U W. The midſhip-frame.

a, *b*, *c*, *d*, *e*, *f*, *g*, *h*. The frames or timbers in the fore-body of the ſhip, i. e. before the midſhip-frame.

1, 2, 3, 4, 5, 6, 7, 8, 9. The timbers in the after-body, or which are erected abaft the midſhip-frame.

As the eye of a ſpectator is ſuppoſed in this projection to view the ſhip's ſide in a line perpendicular to the plane of elevation, it is evident that the convexity will vaniſh, like that of a cylinder or globe, when viewed at a conſiderable diſtance; and that the frames will conſequently be repreſented by ſtraight lines, except the faſhion-piece abaft and the knuckle-timber forward.

It has been already obſerved, that the plane of projection may be defined a vertical delineation of the curves of the timbers upon the plane of the midſhip-frame, which is perpendicular to that of the elevation. It is neceſſary to obſerve here, that the various methods, by which theſe curves are deſcribed, are equally mechanical and arbitrary. In the latter ſenſe, they are calculated to make a ſhip fuller or narrower according to the ſervice for which ſhe is deſigned, and in the former they are drawn according to thoſe rules which the artiſt has been implicitly taught to follow, or which his fancy or judgment has eſteemed the moſt accurate and convenient. They are generally compoſed of ſeveral arches of a circle, reconciled together by moulds framed for that purpoſe. The radii of thoſe arches therefore are of different lengths, according to the breadth of the ſhip in the place where ſuch arches are ſwept; and they are expreſſed on the plane of projection either by horizontal or perpendicular lines; the radii of the breadth-ſweeps being always in the former, and the radii of the floor-ſweeps in the latter direction. Theſe two arches are joined by a third, which coincides with both, without interſecting either. The curve of the top-timber is either formed by a mould which correſponds to the arch of the breadth-ſweep, or by another ſweep, whoſe center and radius are without the plane of projection. The breadth of the ſhip at every top-timber is limited by an horizontal line drawn on the floor-plane, called the half-breadth of the top-timbers. The extreme breadth is alſo determined by another horizontal line on the floor-plane; and the lines of half-breadth are thus mutually transferable, from the projection and floor-planes, to each other.

The neceſſary data by which the curves of the timbers are delineated then are, the perpendicular heighth from the keel, the main or principal breadth, and the top-timber-breadth: for as a ſhip is much broader near the middle of her length than towards the ends, ſo ſhe is broader

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in the middle of her heighth than above and below; and this latter difference of breadth is continued throughout every point of her length. The main breadth of each frame of timbers is therefore the ſhip's breadth nearly in the middle of her heighth in that part: and the top-timber breadth is the line of her breadth near the upper ends of each timber. It has been already obſerved, that as both ſides of a ſhip are alike, the artificers only draw one ſide, from which both ſides of the ſhip are built: therefore the timbers abaft the midſhip-frame are exhibited on one ſide of the plane of projection, and the timbers before it on the other.

Plane of PROJECTION, Plate I.

A. The keel.

B C. The line which expreſſes the upper-edge of the keel, from which the heighth of each timber and heighth of it's different breadths are meaſured.

B D and C E. Perpendiculars raiſed on the line B C, to limit the ſhip's extreme breadth and heighth amid-ſhips; or, in other words, to limit the breadth and heighth of the midſhip-frame.

A F. A perpendicular erected from the middle of the keel to biſect the line of the ſhip's breadth in two equal parts.

F ✱ 9. The half-breadth line of the aftmoſt top-timber; being the uppermoſt horizontal line in this figure.

Note. The ſeven lines parallel to, and immediately under this, on the right ſide of the line A F, are all top-timber half-breadths, abaft the midſhip-frame; the loweſt of which coincides with the horizontal line D E.

The parallel horizontal lines nearly oppoſite to theſe, on the left ſide of the line A F, repreſent the top-timber half-breadths in the fore-body, or the half-breadths of the top-timbers before the midſhip-frame.

G, H, I, Q, R, S, T. The radii of the breadth-ſweeps abaft the midſhip-frame; thoſe of the breadth-ſweeps in the fore-body, or before the midſhip-frame, are directly oppoſite on the right ſide.

⊕ A ⊕. The midſhip-frame, from the extreme breadth downwards.

1, 2, 3, 4, 5, 6, 7, 8, 9. The outlines of the timbers abaft the midſhip-frame, in different parts of their heighth.

a, *b*, *c*, *d*, *e*, *f*, *g*, *h*. The outlines of the timbers before the midſhip-frame, in different parts of their heighth, *h* being the foremoſt, or knuckle timber.

K *i*. The wing-tranſom, whoſe ends reſt upon the faſhion-piece.

L. The deck-tranſom, parallel to, and under the wing-tranſom.

M N O. The lower-tranſoms, of which O *k* is the third and loweſt.

m k P. The dotted line, which expreſſes the figure of the faſhion piece, without being canted aft.

P. The upper-part, or top-timber of the faſhion-piece.

n, *o*, *p*, *q*, *r*, *s*. The radii of the floor-ſweeps, abaft the midſhip-frame: thoſe before the midſhip-frame are on the oppoſite ſide of the line A F, to which they are all parallel.

1ſt R^{d}. 2d R^{d}. 3d R^{d}. 4th R^{d}. The diagonal ribbands abaft the midſhips.

t, *u*, *x*, *y*. The ſame ribbands expreſſed in the fore-body.

It has been remarked above, that the horizontal plane is compoſed of water-lines and ribbands; it alſo contains the main and top-timber breadth-lines, or the longitudinal lines by which the main-breadth and top-timber-breadth are limited in every point of the ſhip's length. The horizontal curve of the tranſoms and harpins are alſo repreſented therein, together with the planes of the principal timbers; the cant of the faſhion-piece, the length of the rake afore and abaft, the projection of the cat-heads, and the curve of the upper-rail of the head, to which the curves of the lower ones are uſually parallel.

HORIZONTAL PLANE. Plate I.

B A C. The line of the ſhip's length, paſſing through the middle of the ſtem and ſtern-poſt.

B. The upper-end of the ſtern-poſt.

C. The upper-end of the ſtem.

B F. The length of the rake abaft.

D W X. The top-timber-breadth line, or the line which limits the breadth of each top-timber.

D F. The breadth of the aftmoſt timber at the taffarel.

B K. The wing-tranſom.

B L P. The horizontal curve of the deck-tranſom.

M M. The horizontal curve, or *round-aft*, of the firſt tranſom.

M N. The horizontal curve of the ſecond tranſom: it is prolonged into a water-line, N 8 7.

k O. The horizontal curve of the third tranſom, which is alſo prolonged into another water-line, O, *n*, U, *p*, Q.

m O P. The plane of the faſhion-piece, as canted aft.

⊕ W U. The plane of the midſhip-frame.

a, *b*, *c*, *d*, *e*, *f*, *h*. The planes of the timbers before the midſhip-frame.

1, 2, 3, 4, 5, 6, 7, 8, 9. The planes of the timbers abaft the midſhip-frame.

X X. The figure of the upper-rail of the head.

C Y. The projection of the knee of the head.

The third horizontal ribband is marked on the plate.

a a. The projection of the cat-head.

Thus we have endeavoured briefly to explain the nature and uſes of the principal draughts uſed in the conſtruction of a ſhip, which reciprocally correſpond with each other in the dimenſions of length, breadth, and depth. Thus the plane of elevation is exactly of the ſame length with the horizontal or floor-plane. The ſeveral breadths of the timbers in the floor-plane and that of the projection are mutually transferable; and the real heighth of the timbers in the projection exactly conforms to their heighth in the elevation. Thus let it be required to transfer the heighth of the wing-tranſom from the elevation to the projection:

Extend the compaſſes from the point K, in the elevation, down to the dotted line prolonged from the upper-edge of the keel, and ſetting the other foot in the point *p*, then ſhall the line K *p* be the perpendicular heighth of the wing-tranſom: tranſfer this from the middle of the line B A C, in the projection, to the point K in the perpendicular A F, then will A K be the heighth of the wing-tranſom in the plane of projection: and thus the heighth of all the tranſoms may be laid from the former upon the latter.

Again, let it be required to tranſfer the main-breadth of the midſhip-frame from the projection to the horizontal plane: Set one foot of the compaſſes in the point ⊕ on the perpendicular C E, and extend the other along the main-breadth-ſweep ⊕ G, till it touches the perpendicular A F parallel to C E: lay this diſtance upon the horizontal plane from the point *u* in the line of the ſhip's length, B A C, along the plane of the midſhip-frame to the point ⊕; ſo ſhall the line ⊕ W U be the breadth of the midſhip-frame on the horizontal plane.

Thus alſo the top-timber-breadth, or the diſtance of each top-timber from the middle of the ſhip's breadth, may be in the ſame manner tranſfered, by extending the compaſſes from the line B A C, in the horizontal plane, to the top-timber-breadth line, upon any particular timber, as 1, 2, 3, &c. which will give it's proper dimenſions thereon.

In the ſame manner the breadths of all the timbers may be laid from the projection to the horizontal plane, and *vice verſa*, from that to the projection. Thus the heighth of each timber may alſo be tranſfered from the elevation to the projection, &c.

The principal utility of theſe draughts therefore is to exhibit the various curves of the ſhip's body, and of the pieces of which it is framed, in different points of view, which are either tranſverſe or longitudinal, and will accordingly preſent them in very different directions. Thus the horizontal curves of the tranſoms and water-lines are repreſented on the floor-plane, all of which are nearly ſtraight lines in the elevation and projection; and thus the vertical curves of the timbers are all exhibited on the projection, although they appear as ſtraight lines in the elevation and floor-plane.

Before this article is cloſed, it may be neceſſary to remark, that the various pieces repreſented in plate I. as well as the lines in the draughts which have not been already defined, are copiouſly explained in their proper places; as it would have been contrary to the plan of this work to have given a more enlarged deſcription of them here.

That the reader, however, might be better enabled to comprehend the ſcope of this article, it was judged neceſſary to give a general ſketch of naval architecture itſelf; to collect into one point of view the moſt material draughts by which a ſhip is conſtructed, and to deſcribe, as conciſely as poſſible, the ſeveral parts of which they are compoſed.

The principal parts of a ſhip alſo, which are here reduced into a narrow compaſs, will be repreſented at large in different places of this work, to illuſtrate thoſe explanations to which it may be neceſſary to refer, in order to underſtand the ſubject more clearly. Thus the ſtern, the quarter, the midſhip-

midſhip-frame, the bow and head, of a ſhip of 74 guns, are exhibited on a ſcale of $\frac{1}{4}$ of an inch to a foot; by which all the ſubordinate parts may be diſtinctly viewed, and their combination and arrangement ſufficiently underſtood.

ARMED-SHIP, *(vaiſſeau armé en guerre capre*, Fr.) a veſſel occaſionally taken into the ſervice of the government in time of war, and employed to guard ſome particular coaſt, or attend on a fleet. She is therefore armed and equipped in all reſpects like a ſhip of war, and commanded by an officer of the navy, who has the rank of maſter and commander. All ſhips of this ſort are upon the eſtabliſhment of the King's ſloops, having a lieutenant, maſter, purſer, ſurgeon, &c.

Top-ARMOUR. See the article TOP.

ASHORE, (from *a* and *ſhore)* on the ſhore, or land, as oppoſed to aboard.

A ſhip is ſaid to be ASHORE, *(echoué*, Fr.) when ſhe has run upon the ground, or on the ſea-coaſt, either by deſign or accident.

ASTERN, *(au derriere*, Fr. from *a* and *ſteorn*, Sax.) any diſtance behind a ſhip, as oppoſed to *a-head*, which is before her. Thus, when ſouth is *a-head*, or on the line to which the ſtem is directed, north will be *aſtern*.

ATHWART, *(par le travers*, Fr. from *a* and *twert*, Dan. tranſverſe) when uſed in navigation, implies acroſs the line of the courſe; as, we diſcovered a fleet at day-break ſtanding *athwart* us, i. e. ſteering acroſs our way.

ATHWART-HAWSE, the ſituation of a ſhip when ſhe is driven by the wind, tide, or other accident, acroſs the fore-part of another. This phraſe is equally applied when the ſhips bear againſt each other, or when they are at a ſmall diſtance; the tranſverſe poſition of the former to the latter being principally underſtood.

ATHWART *the fore-foot*, a phraſe employed to denote the flight of a cannon ball, as fired from one ſhip acroſs the line of another's courſe, to intercept the latter, and compel her to ſhorten ſail till the former approaches near enough to examine her. The *fore-foot* is the lower part of the ſtem; ſo that the ſhot flying acroſs it is ſaid to be fired *athwart the fore-foot*.

ATHWART-SHIPS, reaching acroſs the ſhip, from one ſide to the other.

ATRIP, *(trepor*, Fr. *trippen*, Dutch) is applied differently to the anchor and the ſails. The anchor is *atrip*, *derangée*, when it is drawn out of the ground in a perpendicular direction, either by the cable or buoy-rope. The top-ſails are ſaid to be *atrip*, when they are hoiſted up to the maſt-head, or to their utmoſt extent.

AVAST, the order to ſtop, or pauſe, in any exerciſe.

AVERAGE, in commerce, *(avarie*, Fr. *averagium*, Lat.) the accidents and misfortunes which happen to ſhips and their cargoes, from the time of their loading and ſailing, till their return and unlading. It is divided into three kinds. 1. The ſimple or particular *average*, which conſiſts in the extraordinary expences incurred for the ſhip alone, or for the mer-

chandiſe

chandize alone; ſuch as the loſs of anchors, maſts, and rigging, occaſioned by the common accidents at ſea; the damages which happen to merchandiſes by ſtorms, capture, ſhipwreck, wet, or rotting; all which muſt be borne and paid by the thing that ſuffered the damage. 2. The large and common *average*, being thoſe expences incured, and damages ſuſtained, for the common good and ſecurity, both of the merchandiſe and veſſel, conſequently to be borne by the ſhip and cargo, and to be regulated upon the whole. Of this number are the goods or money given for the ranſom of the ſhip and cargo; things thrown overboard for the ſafety of the ſhip; the expences of unlading, or entering into a river or harbour, and the proviſions and hire of the ſailors when the ſhip is put under embargo. 3. The ſmall *averages*, which are expences for towing and piloting the ſhip out of, or into harbours, creeks, or rivers; one third of which muſt be charged to the ſhip, and two thirds to the cargo.

AVERAGE is more particularly uſed for a certain contribution that merchants make proportionably towards their loſſes. It alſo ſignifies a ſmall duty which the merchants, who ſend goods in another man's ſhip, pay to the maſter, for his care of them, over and above the freight. Hence it is expreſſed in the bills of lading, paying ſo much freight for the ſaid goods, with damage and average accuſtomed.

AUGER, (*augure*, *tarrière*, Fr.) a wimble, carpenter's tool for boreing.

AWEIGH, (*a quitte*, Fr. of *a* and *weigh*) the ſtate of the anchor when it is drawn out of the ground in a perpendicular direction, as in fig. 6. plate I. by the application of mechanical powers, as a capſtern or windlaſs, to the cable within the ſhip; ſo that aweigh is ſynonimous to *atrip*.

AWNING, (*tendelet*, from *aulne*, Fr.) a canopy of canvaſs extending over the decks of a ſhip in hot weather, for the convenience of the officers and crew, and to preſerve the decks from being cracked or ſplit, *ebaroui*, by the heat of the ſun. The awning is ſupported by a range of light poſts, called ſtanchions, which are erected along the ſhip's ſide on the right and left; it is alſo ſuſpended in the middle by a complication of ſmall cords, called a crowfoot. See the article CROWFOOT.

AZIMUTH-COMPASS, an inſtrument employed to diſcover the magnetical azimuth or amplitude of any heavenly object. This operation is performed at ſea, to find the exact variation of the magnetical needle. The compaſs will be deſcribed in it's proper place: it is, however, neceſſary here to explain the additional contrivance by which it is fited to take the magnetical azimuth, or amplitude, of the ſun or ſtars, or the bearings of head-lands, ſhips, and other objects at a diſtance.

The braſs edge, originally deſigned to ſupport the card, and throw the weight thereof as near the circumference as poſſible, is itſelf divided into degrees and halves; which may be eaſily eſtimated into ſmaller parts, if neceſſary. The diviſions are determined by means of a cat-gut line ſtretched perpendicularly with the box, as near the braſs edge as may be, that the parallax ariſing from a different poſition of the obſerver may be as little as poſſible.

There is alſo added an index at the top of the inner box, which may be fixed on or taken off at pleaſure, and ſerves for all altitudes of the object. It conſiſts of a bar, equal in length to the diameter of the inner-box, each end being furniſhed with a perpendicular ſtile, with a ſlit parallel to the ſides thereof; one of the ſlits is narrow, to which the eye is applied, and the other is wider, with a ſmall cat-gut ſtretched up the middle of it, and from thence continued horizontally from the top of one ſtile to the top of the other. There is alſo a line drawn along the upper ſurface of the bar. Theſe four, viz. the narrow ſlit, the horizontal cat-gut thread, the perpendicular one, and the line on the bar, are in the ſame plane, which diſpoſes itſelf perpendicularly to the horizon when the inner-box is at reſt and hangs free. This index does not move round, but is always placed on, ſo as to anſwer the ſame ſide of the box.

The ſun's azimuth is known to be an angle contained between the meridian and the center of the ſun. When this is required, and his rays are ſtrong enough to caſt a ſhadow, the box is turned about till the ſhadow of the horizontal thread, or, if the ſun be too low, till that of the perpendicular thread, in one ſtile, or the ſlit through the other, falls upon the line in the index bar, or vibrates to an equal diſtance on each ſide of it, the box being gently touched if it vibrates too far: at the ſame time they obſerve the degree marked upon the braſs edge of the cat-gut line. In counting the degree for the azimuth, or any other angle that is reckoned from the meridian, the outward circle of figures upon the braſs edge is uſed; and the ſituation of the index, with reſpect to the card and needle, will always direct upon what quarter of the compaſs the object is placed.

But if the ſun does not ſhine out ſufficiently ſtrong, the eye is placed behind the narrow ſlit in one of the ſtiles, and the wooden box turned about till ſome part of the horizontal or perpendicular thread appears to interſect the center of the ſun, or vibrate to an equal diſtance on each ſide of it; ſmoked glaſs being uſed next the eye, if the ſun's light is too ſtrong. In this method another obſerver is neceſſary, to note the degree cut by the nonius, at the ſame time the firſt gives notice that the thread appears to ſplit the object.

Plate II. fig. 20. is a perſpective view of the compaſs, when in order for obſervation; the point of view being the center of the card, and the diſtance of the eye two feet.

A B. is the wooden box in which it is uſually contained.

K. is a cat-gut line drawn from the inſide of the box for determining the degree upon the braſs edge.

L, M, N, O. is the index bar with it's two ſtiles, and cat-gut threads, which being taken off from the top of the box, is placed in two pieces P Q, notched properly to receive it.

The other parts of the figure, with their references, are explained in the article COMPASS.

B.

B.

BACK *of the poſt.* See the article STERN-POST.

To BACK *an anchor*, *(empenneller*, Fr.) to carry out a ſmall anchor, as the ſtream or kedge, ahead of the large one by which the ſhip uſually rides, in order to ſupport it, and prevent it from looſening, or *coming home*, in bad ground. In this ſituation the latter is confined by the former, in the ſame manner that the ſhip is reſtrained by the latter.

To BACK *aſtern*, in rowing, *(ſcier à culer*, Fr.) is to manage the oars in a direction contrary to the uſual method, ſo as that the boat, or veſſel, impreſſed by their force, ſhall retreat, or move with her ſtern foremoſt, inſtead of advancing.

To BACK *the ſails*, *(mettre à ſcier*, Fr.) is to arrange them in a ſituation that will occaſion the ſhip to retreat or move aſtern. This operation is particularly neceſſary in narrow channels, when a ſhip is carried along ſidewiſe by the ſtrength of the tide or current, and it becomes requiſite to avoid any object that may intercept her courſe, as ſhoals, or veſſels under ſail or at anchor: it is alſo neceſſary in a naval engagement, to bring a ſhip back, ſo as to lie oppoſite to her adverſary, when ſhe is too far advanced in the line. See ABACK.

BACK-BOARD, *(le doſſier d'un bateau*, Fr.) a piece of board of a ſemicircular figure placed tranſverſely in the after-part of a boat, like the back of a chair, and ſerving the paſſengers to recline againſt whilſt ſitting in the ſtern-ſheets. See BOAT.

BACK-STAYS, *(cale-haubans*, Fr.) from *back* and *ſtay*, long ropes reaching from the topmaſt-heads to the ſtarboard and larboard ſides of the ſhip, where they are extended to the channels: they are uſed to ſupport the top-maſts, and ſecond the efforts of the ſhrouds, when the maſt is ſtrained by a weight of ſail in a freſh wind.

They are uſually diſtinguiſhed into breaſt-back-ſtays and after-back-ſtays; the intent of the former being to ſuſtain the top-maſt when the force of the wind acts upon the ſhip ſidewiſe, or, according to the ſea-phraſe, when the ſhip ſails upon a wind; and the purpoſe of the latter is to enable it to carry ſail when the wind is further aft.

There are alſo back-ſtays for the top-gallant-maſts, in large ſhips, which are fixed in the ſame manner with thoſe of the top-maſts.

A pair of back-ſtays is uſually formed of one rope, which is doubled in the middle, and faſtened there ſo as to form an eye, which paſſes over the maſt-head, from whence the two ends hang down, and are ſtretched to the channels by dead-eyes and laniards. See DEAD-EYES, &c.

The figure of the back-ſtays, and their poſition, is exhibited in the article RIGGING, to which the reader is further refered.

BADGE, (*bouteille*, *fauſſe galerie*, Fr.) in ſhip-building, a ſort of ornament, placed on the outſide of ſmall ſhips, very near the ſtern, containing either a window, for the convenience of the cabin, or the repreſentation of it: it is commonly decorated with marine figures, martial inſtruments, or ſuch like emblems. See QUARTER.

To BAGPIPE *the mizen*, is to lay it *aback*, by bringing the ſheet to the mizen ſhrouds.

To BALANCE, (*balancer*, Fr.) to contract a ſail into a narrower compaſs, in a ſtorm, by retrenching or folding up a part of it at one corner: this method is uſed in contradiſtinction to *reefing*, which is common to all the principal ſails; whereas balancing is peculiar to few, ſuch as the mizen of a ſhip, and the main-ſail of thoſe veſſels, wherein it is extended by a boom. See BOOM and REEF.

The BALANCE of the mizen, (*fanon*, Fr.) is thus performed: the mizen-yard is lowered a little, then a ſmall portion of the ſail is rolled up at the *peek*, or upper corner, and faſtened to the yard about one fifth inward from the outer end, or yard-arm, toward the maſt. See MIZEN.

A boom main-ſail is balanced, after all it's reefs are taken in, by rolling up a ſimilar portion of the hindmoſt or aftmoſt lower corner, called the *clue*, and faſtening it ſtrongly to the boom, having previouſly wraped a piece of old canvas round the part (which is done in both caſes) to prevent the ſail from being freted by the cord which faſtens it.

BALLAST, (*leſt*, Fr. *ballaſte*, Dut. *ballaſtro*, Span.) a certain portion of ſtone, iron, gravel, or ſuch like materials, depoſited in a ſhip's hold, when ſhe has either no cargo, or too little to bring her ſufficiently low in the water. It is uſed to counter-balance the effort of the wind upon the maſts, and give the ſhip a proper ſtability, that ſhe may be enabled to carry ſail without danger of overſeting.

There is often great difference in the proportion of ballaſt required to prepare ſhips of equal burthen for a voyage; the quantity being always more or leſs, according to the ſharpneſs or flatneſs of the ſhip's bottom, which ſeamen call the *floor*.

The knowledge of ballaſting a ſhip with propriety is certainly an article that deſerves the attention of the ſkilful mariner; for although it is known that ſhips in general will not carry a ſufficient quantity of ſail, till they are laden ſo deep that the ſurface of the water will nearly glance on the extreme breadth amidſhips, yet there is more than this general knowledge required; ſince, if ſhe has a great weight of heavy ballaſt, as lead, iron, &c. in the bottom, it will place the center of gravity too low in the hold; and although this will enable her to carry a great ſail, ſhe will nevertheleſs ſail very heavily, and run the riſk of being diſmaſted by her violent rolling.

To ballaſt a ſhip, therefore, is the art of diſpoſing thoſe materials ſo that ſhe may be duly poiſed, and maintain a proper equilibrium on the water, ſo as neither to be too *ſtiff*, nor too *crank*, qualities equally pernicious: as in the firſt, although the ſhip may be fited to carry a great ſail, yet her velocity will not be proportionably increaſed; whilſt her maſts are more endangered

endangered by her ſudden jerks and exceſſive labouring: and in the laſt, ſhe will be incapable of carrying ſail without the riſk of overſeting.

Stiffneſs in ballaſting is occaſioned by diſpoſing a great quantity of heavy ballaſt, as lead, iron, &c. in the bottom, which naturally places the center of gravity very near the keel; and that being the center about which the vibrations are made, the lower it is placed, the more violent will be the motion of rolling.

Crankneſs, on the other hand, is occaſioned by having too little ballaſt, or by diſpoſing the ſhip's lading ſo as to raiſe the center of gravity too high, which alſo endangers the maſt in carrying ſail when it blows hard: for when the maſts loſe their perpendicular heighth, they ſtrain on the ſhrouds in the nature of a lever, which increaſes as the ſine of their obliquity; and a ſhip that loſes her maſts is in great danger of being loſt.

The whole art of ballaſting, therefore, conſiſts in placing the center of gravity to correſpond with the trim and ſhape of the veſſel, ſo as neither to be too high nor too low; neither too far forward, nor too far aft; and to lade the ſhip ſo deep, that the ſurface of the water may nearly riſe to the extreme breadth amidſhips; and thus ſhe will be enabled to carry a good ſail, incline but little, and ply well to the windward. See the article TRIM.

BANIAN-DAYS, a cant term among common ſailors, denoting thoſe days on which they have no fleſh-meat: it ſeems to be derived from the practice of a nation amongſt the eaſtern Indians, who never eat fleſh.

BANK, (*banc*, *atterriſſement*, Fr. *banc*, Sax.) an elevation of the ground, or bottom of the ſea, which is often ſo high as to appear above the ſurface of the water, or at leaſt ſo little beneath it, as to prevent a ſhip from floating over it: in this ſenſe, bank amounts nearly to the ſame as ſhallows, flats, &c. The ſhelves that abound with rocks under water are diſtinguiſhed by other names, as reefs, ridges, keys, &c.

An exact knowledge of the banks, their extent, and the different depths of water in which they lie, conſtitutes a very eſſential portion of the ſcience of a pilot, or maſter of a ſhip. If the veſſel be large, and draws much water, great attention will be neceſſary to avoid them. If, on the contrary, ſhe is ſmall, the ſame banks afford a ſure aſylum, where ſhe may brave the largeſt ſhips, which dare not follow her to ſo dangerous a retreat. Many ſmall veſſels have eluded the purſuit of a ſuperior enemy by means of this hoſpitable barrier.

BANKS on the ſea-coaſt are uſually marked by beacons or buoys. In charts they are diſtinguiſhed by little dots, as ridges of rocks are characteriſed by croſſes. The principal banks in the Weſtern Ocean, are thoſe of Newfoundland, and the Bahama-Bank: the moſt remarkable one in Newfoundland is called the Grand Bank, which is of a vaſt extent, being nearly two hundred miles in length, and ſtretching north and ſouth: it's uſual depth is from twenty to eighty fathoms: and this is the great ſcene of the cod-fiſhery, which is ſo material an article in European commerce.

BANK *of oars*, a ſeat or bench of rowers in a galley.

BANKER, a veſſel employed in the cod-fiſhery on the Banks of Newfoundland.

BAR *of a port or haven*, a ſhoal or bank of ſand, gravel, &c. thrown up by the ſurge of the ſea, to the mouth of a river or harbour, ſo as to endanger, and ſometimes totally prevent, the navigation.

BARCA-LONGA, a large Spaniſh fiſhing-boat, navigated with lug-ſails, and having two or three maſts: theſe are very common in the Mediterranean. See VESSEL.

BARGE, (*bargie*, Dut.) a veſſel or boat of ſtate, furniſhed with elegant apartments, canopies, and cuſhions; equiped with a band of rowers, and decorated with flags and ſtreamers: they are generally uſed for proceſſions on the water, by noblemen, officers of ſtate, or magiſtrates of great cities. Of this ſort we may naturally ſuppoſe the famous barge or galley of Cleopatra, which, according to Shakeſpeare,

——————— 'Like a burniſh'd throne
Burnt on the water; the poop was beaten gold;
Purple her ſails, and ſo perfumed, that
The winds were love-ſick with them: the oars were ſilver,
Which to the tune of flutes kept ſtroke, and made
The water which they beat to follow faſter,
As amorous of their ſtrokes——
————————————At the helm
A ſeeming mermaid ſteer'd: the ſilken tackles
Swell'd with the touches of thoſe flower-ſoft hands
That yarely form'd their office.'——

There are likewiſe other barges of a ſmaller kind, for the uſe of admirals and captains of ſhips of war. Theſe are of a lighter frame, and may be eaſily hoiſted into, and out of the ſhips to which they occaſionally belong. See BOAT.

BARGE, (*caboticre*, Fr.) is alſo the name of a flat-bottomed veſſel of burthen, for lading and diſcharging ſhips, and removing their cargoes from place to place in a harbour.

BARK, (*barca*, low Lat.) a general name given to ſmall ſhips: it is however peculiarly appropriated by ſeamen to thoſe which carry three maſts without a mizen top-ſail. Our northern mariners, who are trained in the coal-trade, apply this diſtinction to a broad-ſterned ſhip, which carries no oanamental figure on the ſtem or prow.

BARNACLE, (*cravan*, Fr.) a ſpecies of ſhell-fiſh, often found ſticking to the bottoms of ſhips, rocks, &c.

BARRICADOE, (*barricade*, Fr. *barricada*, Span.) a ſtrong wooden rail, ſupported by ſeveral little pillars or ſtanchions, and extending, as a fence, acroſs the foremoſt part of the quarter-deck. In a veſſel of war, the intervals between the pillars are commonly filled with cork, junks of old cable, or matts of plaited cordage. In the upper part, there is a double rope-netting, ſupported by double cranes of iron, extending about a foot above the rail; and between the two parts of the netting are ſtuffed a number of hammocks, filled with the ſeamens bedding, to intercept and prevent

prevent the execution of ſmall-ſhot fired by ſwivel guns, carabines, or muſkets, in the time of battle.

BARS *of the Capſtern and Windlaſs.* See thoſe articles.

BASIN *of a dock*, (*baſſin*, Fr.) a place where the water is confined by double flood-gates, and thereby prevented from running out at the tide of ebb. The uſe of it is to contain ſhips whilſt repairing, either before they enter, or after they come out of the dock.

Basin, (*paradis*, Fr.) alſo implies ſome part of a haven, which opens from a narrow channel into a wide and ſpacious reſervoir for ſhiping.

BATTENS *of the hatches*, a ſort of long narrow laths, ſcantlings of wooden ſtuff, or ſtreight hoops of caſks. They are nailed along the edges of tarpaulings, which are pieces of tarred canvas, of ſufficient breadth and length to cover the hatches at ſea; the battens ſerve to confine the edges of the tarpaulings cloſe down to the ſides of the hatches, to prevent the water, which may ruſh over the decks in a ſtorm, from penetrating into the lower apartments of the ſhip.

BAY, (*baye*, Fr.) a gulf or inlet of the ſea-coaſt, comprehended between two promontories, or capes of land, where ſhiping frequently ride at anchor, ſheltered from the wind and ſea.

BEACON, (*baliſe*, Fr. *beacon*, Sax.) a poſt or ſtake erected over a ſhoal or ſand-bank, as a warning to ſeamen to keep their ſhips at a diſtance.

BEACONAGE, (*branche de ciprès*, Fr.) a ſmall duty paid by ſhiping in France, for keeping beacons in repair.

BEAK-HEAD, (*coltis*, Fr.) a name given to a ſhip's head whoſe fore-caſtle is ſquare or oblong, a circumſtance common to all veſſels of war which have two or more decks of guns. In ſmaller ſhips, the forecaſtle is nearly ſhaped like a parabola, whoſe vertex, or angular point, lies immediately over the ſtem.

The ſtrong, projecting, pointed beaks uſed by the ancients in time of battle, have been intirely rejected ſince the uſe of gun-powder.

BEAMS, (*baux*, Fr. *beam*, Sax. a tree) ſtrong thick pieces of timber, ſtretching acroſs the ſhip from ſide to ſide, to ſupport the decks, and retain the ſides at their proper diſtance.

The Beams of ſhips of war are uſually formed of three pieces ſcarfed together; as appears in plate III. They are ſuſtained at each end by thick planks in the ſhip's ſide, called clamps, upon which they reſt. They are alſo firmly connected to the timbers of the ſhip by means of ſtrong knees, and ſometimes by ſtandards. See Midship-Frame.

It is neceſſary that the beams, as repreſented in the midſhip-frame, ſhould have a greater heighth in the middle than at the two ends, to carry the water more readily off from the decks, and to diminiſh the recoil of the guns, which will thereby more eaſily return into their places.

The longeſt of theſe is called the *midſhip-beam*; it is lodged in the midſhip-frame, or between the wideſt frame of timbers. At about two-thirds of the heighth from the keel to the lower-deck, are laid a range of beams, to fortify the hold, and ſupport a platform called the orlop, which contains the cables and ſtores of the ſhip.

There are uſually twenty-four beams on the lower deck of a ſhip of ſeventy-four guns, and to the other decks additional ones in proportion, as the ſhip lengthens above.

On the BEAM, implies any diſtance from the ſhip on a line with the beams, or at right angles with the keel: thus, if the ſhip ſteers or points northward, any object lying eaſt or weſt, is ſaid to be on her ſtarboard or larboard *beam*. Thus alſo,

Before the BEAM, is an arch of the horizon comprehended between the line that croſſes her length at right angles, and ſome object at a diſtance before it, or between the line of the beam and that point of the compaſs which ſhe ſtems. Thus if a ſhip, ſteering weſt, diſcovers an iſland on the right, three points *before the beam*, the iſland muſt bear N W by N from the ſhip. See the article BEARING.

BEAN-COD, a ſmall fiſhing-veſſel, or pilot-boat, common on the ſea-coaſts and in the rivers of Portugal. It is extremely ſharp forward, having it's ſtem bent inward above into a great curve: the ſtem is alſo plated on the fore-ſide with iron, into which a number of bolts are driven, to fortify it, and reſiſt the ſtroke of another veſſel, which may fall athwart-hawſe. It is commonly navigated with a large lateen ſail, which extends over the whole length of the deck, and is accordingly well fited to ply to windward.

BEAR-A-HAND! a phraſe of the ſame import with make haſte, diſpatch, quick, &c.

BEARING, in navigation, (*giſement*, Fr.) an arch of the horizon intercepted between the neareſt meridian and any diſtinct object, either diſcovered by the eye, or reſulting from the ſinical proportion; as in the firſt caſe, at 4 P. M. Cape Spado, in the iſle of Candia, bore S by W. by the compaſs.

In the ſecond, the longitudes and latitudes of any two places being given, and conſequently the difference of latitude and longitude between them, the bearing from one to the other is diſcovered by the following analogy:

As the meridianal difference of latitude
Is to the difference of longitude:
So is radius
To the tangent bearing.

BEARING is alſo the ſituation of any diſtant object, eſtimated from ſome part of the ſhip according to her poſition. In this ſenſe an object, ſo diſcovered, muſt be either ahead, aſtern, abreaſt, on the bow, or on the quarter.

Theſe BEARINGS, therefore, which may be called mechanical, are on the beam, before the beam, abaft the beam, on the bow, on the quarter, ahead, or aſtern. If the ſhip ſails with a ſide-wind, it alters the names of ſuch bearings in ſome meaſure, ſince a diſtant object on the beam is then ſaid to be to leeward, or to windward; on the lee quarter, or bow; and on the weather quarter or bow.

BEARING-UP or BEARING-away, (*arriver*, Fr.) in navigation, the act of changing the courſe of a ſhip, in order to make her run before the wind, after ſhe had ſailed ſome time with a ſide-wind, or cloſe-hauled: it is generally performed to arrive at ſome port under the lee, or to avoid ſome imminent danger occaſioned by a violent ſtorm, leak, or an enemy in ſight.

This phraſe, which is abſurd enough, ſeems to have been derived from the motion of the helm, by which this effect is partly produced; as the helm is then borne *up* to the windward, or weather ſide of the ſhip. Otherwiſe, it is a direct contradiction in terms, to ſay that a ſhip *bears up*, when ſhe goes before the wind; ſince the current of the wind, as well as that of a river, is always underſtood to determine the ſituation of objects or places within it's limits. In the firſt ſenſe we ſay, up to windward and down to leeward; as in the latter we ſay, up or down the river. This expreſſion, however, although extremely improper, is commonly adopted in the general inſtructions of our navy, printed by authority, inſtead of bearing down, or bearing away.

BEATING, in navigation, the operation of making a progreſs at ſea againſt the direction of the wind, in a zig-zag line, or traverſe, like that in which we aſcend a ſteep hill. As this method of ſailing will be particularly explained under the term TACKING, the reader is referred to that article.

To BECALM, (*derober*, *abrié*, Fr. from *calme*, Dut.) to intercept the current of the wind, in it's paſſage to a ſhip, with any contiguous object, as a ſhore above her ſails, a high ſea behind, or ſome other ſhip. At this time the ſails remain in a ſtate of reſt, and are conſequently deprived of their power to govern the motion of the ſhip.

BECKETS, (*billé*, Fr.) imply in general any thing uſed to confine looſe ropes, tackles, oars, or ſpars, in a convenient place, where they may be diſpoſed out of the way till they are wanted. Hence, beckets are either large hooks, or ſhort pieces of rope, with a knot on one end and an eye in the other, or formed like a circular wreath; or they are wooden brackets; and, probably, from a corruption and miſapplication of this laſt term, aroſe the word becket, which ſeems often to be confounded with bracket.

Put the tacks and ſheets in the BECKETS! the order to hang up the weather main and fore-ſheet, and the lee main and fore-tack, to a little knot and eye-becket on the foremoſt main and fore-ſhrouds, when the ſhip is cloſe-hauled, to prevent them from hanging in the water.

BED, a flat thick piece of timber, uſually formed of the rough ſtaves of caſks, or ſuch like materials, to be lodged under the quarters of caſks containing any liquid and ſtowed in a ſhip's hold. The uſe of the beds is to ſupport the caſk, and keep the bilge, or middle-part of it, from bearing againſt the ſhip's floor, or againſt the body upon which it reſts, leſt the ſtaves ſhould give way and break in the place where they are weakeſt: or lie in a wet place, ſo as to rot in the courſe of the voyage. See the article STOWING.

BED *of a river*, (*lit*, Fr.) the bottom of the channel in which the ſtream or current uſually flows.

BED *of a cannon*. See CARRIAGE.

To BELAY, (*amarrer*, Fr. from *beleygen*, Belg.) to faſten a rope by winding it ſeveral times round a cleat, belaying-pin, or kevel: this term is peculiar to ſmall ropes, and chiefly the running-rigging, there being ſeveral other expreſſions uſed for large ropes, as bitting, bending, making faſt, ſtoppering, &c. See thoſe articles.

BEND, (*avuſte*, Fr. probably from *bindan*, Sax. to bind) the knot by which one rope is faſtened to another; hence

To BEND, is to faſten one rope to another, of which there are ſeveral methods.

BENDING *the cable*, the operation of clinching, or tying the cable to the ring of it's anchor.

BENDING *a ſail*, faſtening it to it's yard or ſtay. See the articles SAIL, STAY, and YARD.

BENDS, the thickeſt and ſtrongeſt planks in a ſhip's ſide. See WALES, by which name they are more properly called.

BETWEEN-DECKS, (*entre-pont*, Fr.) the ſpace contained between any two decks of a ſhip.

BEVELLING, (*enfoncé*, Fr.) in ſhip-building, the art of hewing a timber with a proper and regular curve, according to a mould which is laid on one ſide of it's ſurface.

'In order to hew any piece of timber to it's proper bevel, it will be neceſſary, firſt, to make one ſide fair and out of winding; a term uſed to ſignify that the ſide of a timber ſhould be a plane. If this ſide be uppermoſt, and placed horizontally, or upon a level, it is plain, if the timber is to be hewed ſquare, it may be done by a plummet and line; but if the timber is not hewed ſquare, the line will not touch both the upper and lower edge of the piece; or if a ſquare be applied to it, there will be wood wanting either at the upper or lower ſide. This is called within or without a ſquare. When the wood is deficient at the under-ſide, it is called under-bevelling; and when it is deficient in the upper-ſide, it is called ſtanding-bevelling: and this deficiency will be more or leſs according to the depth of the piece; ſo that before the proper bevellings of the timbers are found, it will be ſometimes very convenient to aſſign the breadth of the timbers; nay, in moſt caſes it will be abſolutely neceſſary, eſpecially afore and abaft: though the breadth of two timbers, or the timber and room, which includes the two timbers and the ſpace between them, may be taken without any ſenſible error, as far as the ſquare body goes. For as one line repreſents the moulding-ſide of two timbers, the fore-ſide of the one being ſuppoſed to unite with the aft-ſide of the other; the two may be conſidered as one intire piece of timber.' *Murray's Ship-building*.

BIGHT, (*balant*, Fr. *bygan*, Sax. to bend) the double part of a rope when it is folded, in contradiſtinction to the end: as, her anchor hooked the *bight* of our cable, i. e. caught any part of it between the ends. The *bight* of his cable has ſwept our anchor; that is, the double part of the cable of another

ſhip, as ſhe ranged about, has entangled itſelf under the ſtock or fluke of our anchor.

Bight, (*anſe*, Fr.) is alſo a ſmall bay between two points of land.

BILANDER, (*bilandre*, Fr.) a ſmall merchant-ſhip with two maſts.

The Bilander is particularly diſtinguiſhed from other veſſels of two maſts by the form of her main-ſail, which is a ſort of trapezia, the yard thereof being hung obliquely on the maſt in the plane of the ſhip's length, and the aftmoſt or hinder end peeked or raiſed up to an angle of about 45 degrees, and hanging immediately over the ſtern; while the fore end ſlopes downward, and comes as far forward as the middle of the ſhip. To this the ſail is bent or faſtened; and the two lower corners, the foremoſt of which is called the tack and the aftmoſt the ſheet, are afterwards ſecured, the former to a ring-bolt in the middle of the ſhip's length, and the latter to another in the taffarel. The main-ſails of larger ſhips are hung acroſs the deck inſtead of along it; being faſtened to a yard which hangs at right angles with the maſt and the keel.

Few veſſels, however, are now rigged in this method, which has probably been found more inconvenient than ſeveral others. See Ship. It may not be improper to remark, that this name, as well as brigantine, has been variouſly applied in different parts of Europe to veſſels of different ſorts.

BILGE, (ſuppoſed from *bilik*, Sax. a ſtorm) that part of the floor of a ſhip, on either ſide of the keel, which approaches nearer to an horizontal than to a perpendicular direction, and on which the ſhip would reſt if laid on the ground: or more particularly, thoſe parts of the bottom which are oppoſite to the heads of the floor-timbers amidſhips on each ſide of the keel. Hence when a ſhip receives a fracture in this place, ſhe is ſaid to be *bilged*.

BILL, the point or extremity of the fluke of an anchor.

Bill *of lading*, (*connoiſſement*, Fr.) an acknowledgment ſigned by the maſter of a ſhip, and given to a merchant, containing an account of the goods which the former has received from the latter, &c. with a promiſe to deliver them at the intended place for a certain ſum of money. Each bill of lading muſt be treble; one for the merchant who ſhips the goods, another to be ſent to the perſon to whom they are conſigned, and the third to remain in the hands of the maſter of the ſaid ſhip. It muſt, however, be obſerved, that a bill of lading is only uſed when the goods ſent on board a ſhip are but part of the cargo; for when a merchant loads a veſſel entirely on his own account, the deed paſſed between him and the maſter of the ſhip is called charter-party. See Charter-party.

BINACLE, a wooden caſe or box, which contains the compaſſes, log-glaſſes, watch-glaſſes, and lights to ſhew the compaſs at night.

As this is called *bittacle* in all the old ſea-books, even by mariners, it appears evidently to be derived from the French term *habitacle*, (a ſmall habitation) which is now uſed for the ſame purpoſe by the ſeamen of that nation.

The Binacle (plate I. fig. 4.) is furniſhed with three apartments, with ſliding ſhutters: the two ſide ones, a b, have always a compaſs in each, d, to direct the ſhip's way, while the middle diviſion, c, has a lamp or candle,

with a pane of glaſs on either ſide to throw a light upon the compaſs in the night, whereby the man who ſteers may obſerve it in the darkeſt weather, as it ſtands immediately before the helm on the quarter-deck.

There are always two binacles on the deck of a ſhip of war, one being deſigned for the man who ſteers, and the other for the perſon who ſuperintends the ſteerage, whoſe office is called *conning*, or *cunning*.

BIRTH, or BERTH, (*evitée*, Fr.) the ſtation in which a ſhip rides at anchor, either alone or in a fleet; or the diſtance between the ſhip and any adjacent object; comprehending the extent of the ſpace in which ſhe ranges at the length of her cables; as, *ſhe lies in a good birth*, i. e. in a convenient ſituation, or at a proper diſtance from the ſhore and other veſſels; and where there is good anchoring-ground, and ſhelter from the violence of the wind and ſea.

BIRTH, (*appartement*, Fr.) alſo ſignifies the room or apartment where any particular number of the officers or ſhip's company uſually meſs and reſide. In a ſhip of war there is commonly one of theſe between every two guns.

To BITE, (*mordre*, Fr.) to hold faſt in the ground; expreſſed of the anchor.

BITS, (*bittes*, Fr. *bitol*, Sax.) a frame compoſed of two ſtrong pieces of timber, fixed perpendicularly in the fore-part of a ſhip, whereon to faſten her cables as ſhe rides at anchor. See b b, PIECES *of the* HULL.

Theſe pieces, being let down through ſquare mortiſes cut in the decks above and below, are bolted and fore-locked to the ſhip's beams. There are ſeveral bits in a ſhip, the principal of which are thoſe for the cables: their upper ends commonly reach about four or five feet above the lower deck, over which the cable paſſes. They are ſupported on the fore part by ſtrong ſtandards; one arm of which is bolted to the deck, and the other to the bits: and on the after part is fixed a ſtrong beam of timber, g, (plate I. PIECES *of the* HULL) parallel to the deck, and at right angles with the bits, to which it is bolted and fore-locked. The ends of this beam, which is called the croſs-piece, reach about two or three feet beyond the bits, whoſe upper-ends are nearly two feet above the croſs-piece. The cable being paſſed once round about theſe bits, may be gradually ſlackened at pleaſure; without which it would be impoſſible to prevent it from running out with the utmoſt rapidity, when the ſhip rides a great ſtrain, which is always the caſe in a ſtorm, or an impetuous tide. In ſhips of war there are uſually two pair of cable bits, and when they are both uſed at once the cable is ſaid to be double-bitted. The plan of the bits, with their croſs-pieces and ſtandards, are repreſented in plate III. where b b are the bits, e their ſtandards, and g the croſs-piece.

To BIT *the cable*, is to put it round the bits, in order to faſten it, or ſlacken it gradually, which laſt is called *veering away*.

The other bits are of a ſmaller kind, but conſtructed nearly in the ſame manner. They are uſed to faſten the top-ſail-ſheets, or the ropes by which the lower corners of the top-ſails are extended.

BLACK-STRAKES, a range of planks immediately above the wales in a ſhip's ſide: they are always covered with a mixture of tar and lamp-black, forming an agreeable variety with the white bottom beneath, and

the ſcraped planks of the ſide, covered with melted turpentine, or varniſh of pine, above. All the yards are likewiſe daubed with this mixture, which not only preſerves them from the heat of the ſun and the weather, but gives them a fine gloſs, which makes a good appearance contraſted with the white varniſh on the maſts.

BLADE. See the article OAR.

BLOCK, *(poulie*, Fr.) a machine known in mechanics by the name of pully, and uſed for various purpoſes in a ſhip, particularly to increaſe the mechanical power of the ropes employed in contracting, dilating, or traverſing the ſails. The ends of theſe ropes, being arranged in certain places upon the deck, may thus be readily found whenever they are wanted. The blocks, which are for theſe purpoſes diſpoſed in various places upon the maſts, yards, and ſails, and amongſt the rigging, are alſo of various ſizes, ſhapes, and powers, according to the effect they are calculated to produce. They are ſingle, double, or treble, being ſo denominated from the number of wheels they contain. There are even ſome of them five, ſix, and ſeven fold, but theſe are only employed to raiſe or move ſome very weighty bodies, and are not uſed about the yards or ſails. We ſhall begin by deſcribing the moſt ſimple, and afterwards proceed to thoſe which are more complicated.

A common ſingle block is compoſed of three parts; the ſhell, the ſheave, and the pins. The ſhell, *arcaſſe*, approaches neareſt to the figure of a long ſpheroid, ſomewhat flatted in the middle. Between the two flat ſides it is hollowed ſo as to receive a narrow cylindrical wheel called the ſheave, *rouet*, formed of lignum-vitæ, or other hard wood; and through the center of this ſheave is bored a round hole to admit of a pin, which is driven through two correſponding holes in the middle of the ſhell, perpendicular to the hollow ſpace within. The pin thus becomes the axis of the wheel or ſheave, which completes the wooden work of the machine. Thus formed, it is bound with a ſort of rope-ring, which is cloſely fitted to a notch paſſing round the ſurface of the ſhell, and over both ends of the pin: and by this ring, or wreath, which is called a block-ſtrop, they are ſuſpended upon the maſts, ſhrouds, &c.

The complicated blocks, or thoſe which contain a number of wheels, either have all the wheels to run upon one axis, (ſee plate I.) or have their ſhells ſo formed that the wheels are one above another. In the former ſhape they approach neareſt the figure of a cylinder, and in the latter appear like two or more ſingle blocks joined together endways.

In plate I. fig. 7. a, repreſents a ſingle block, and b, c, two double ones, of different kinds, without ſtrops. Fig. e, f, two double tackle blocks iron-bound, the lower one, f, being fitted with a ſwivel; g, a double iron-bound block with a large hook; h, a ſnatch-block; i, a top-block; k, a voyal-block, and l, a clue-garnet-block. See SNATCH-BLOCK, TACKLE, and VOYAL.

The Cat-block (plate II. fig. 15.) is employed to draw the anchor up to the cat-head. See the article CAT.

The ſwivel in the iron-bound block is to turn it, that the ſeveral parts of the rope, of which the tackle is compoſed, may not be twiſted round each other, which would greatly diminiſh the mechanical power.

The

The top-block is uſed to hoiſt up or lower down the top-maſts, and is for this purpoſe hooked in an eye-bolt driven into the cap. See CAP.

The clue-garnet blocks are uſed to draw the clues, or lower-corners of the *courſes*, up to the yard, and are conſequently faſtened to the clues of thoſe ſails. See CLUE-GARNET. The uſe of the ſhoulder on the lower-end, is to prevent the ſtrop from being fretted or chafed by the motion of the ſail, as the ſhip rolls or pitches.

BLOCK AND BLOCK, the ſituation of a tackle when the two oppoſite blocks are drawn cloſe together, ſo that the mechanical power becomes deſtroyed, till the tackle is again *over-hauled* by drawing the blocks aſunder.

BOARD, in navigation, (*bordée*, Fr.) the ſpace comprehended between any two places where the ſhip changes her courſe by tacking; or the line over which ſhe runs between tack and tack, when ſhe is turning to windward, or ſailing againſt the direction of the wind. See the articles BEATING and TACKING.

She makes a good BOARD, i. e. ſails nearly upon a ſtraight line, without deviating to leeward when ſhe is cloſe-hauled. See CLOSE-HAULED.

BOARDING (*abordage*, Fr.) an aſſault made by one ſhip upon another, by entering her in battle with a detachment of armed men; either becauſe the efforts of the artillery and muſquetry have proved ineffectual, or becauſe ſhe may have a greater number of men, and be better equipped for this attack than the enemy who defends herſelf againſt it.

This ſtratagem, however, is chiefly practiſed by privateers upon merchant-ſhips, who are not ſo well provided with men, and rarely attempted in the royal navy; the battle being generally decided in ſhips of war by the vigorous execution of a cloſe cannonade.

An officer ſhould maturely conſider the danger of boarding a ſhip of war before he attempts it; and be well aſſured that his adverſary is weakly manned; for perhaps he wiſhes to be boarded, and if ſo, a great ſlaughter will neceſſarily follow.

The ſwell of the ſea ought alſo to be conſidered, becauſe it may run ſo high as to expoſe both the ſhips to the danger of ſinking.

There is perhaps very little prudence in boarding a ſhip of equal force; and when it is attempted, it may be either to windward or to leeward, according to the comparative force or ſituation of the ſhips. If there be any ſwell, or ſea, it may be more adviſeable to lay the enemy aboard on the lee-ſide, as the water is there the ſmoothеſt; beſides, if the boarder is repulſed in that ſituation, he may more eaſily withdraw his men, and ſtand off from his adverſary. But as the weather-ſhip can generally fall to leeward at any time, it is perhaps more eligible to keep to windward, by which ſhe will be enabled to rake her antagoniſt, or fire the broadſide into her ſtern as ſhe croſſes it, in paſſing to leeward, which will do great execution amongſt her men, by ſcouring the whole length of the deck.

Boarding may be performed in different places of the ſhip, according to the circumſtances, preparation and poſition of both: the aſſailant having previouſly ſelected a number of men armed with piſtols and cutlaſſes. A number of powder-flaſks, or flaſks charged with gun-powder and fitted with a fuſe, are alſo provided, to be thrown upon the enemy's deck immediately

immediately before the aſſault. Beſides this, the boarder is generally furniſhed with an earthen ſhell, called a ſtink-pot, which on that occaſion is ſuſpended from his yard-arms or bowſprit-end. This machine is alſo charged with powder, mixed with other inflammable and ſuffocating materials, with a lighted fuſe at the aperture. Thus prepared for the action, and having grappled his adverſary, the boarder diſplays his ſignal to begin the aſſault. The fuſes of the ſtink-pot and powder-flaſks being lighted, they are immediately thrown upon the deck of the enemy, where they burſt and catch fire, producing an intolerable ſtench and ſmoke, and filling the deck with tumult and diſtraction. Amidſt the confuſion occaſioned by this infernal apparatus, the detachment provided ruſh aboard ſword in hand, under cover of the ſmoke, on their antagoniſt, who is in the ſame predicament with a citadel ſtormed by the beſiegers, and generally overpowered, unleſs he is furniſhed with extraordinary means of defence, or equipped with cloſe-quarters, to which he can retreat with ſome probability of ſafety. See the article CLOSE-QUARTERS.

BOAT, (*bæt*, Sax. *boot*, Belg.) a ſmall open veſſel, conducted on the water by rowing or ſailing. The conſtruction, machinery, and even the names of boats, are very different, according to the various purpoſes for which they are calculated, and the ſervices on which they are to be employed.

Thus they are occaſionally ſlight or ſtrong; ſharp or flat-bottomed; open or decked; plain or ornamented; as they may be deſigned for ſwiftneſs or burthen; for deep or ſhallow water; for ſailing in a harbour or at ſea; and for convenience, or pleaſure.

The largeſt boat that uſually accompanies a ſhip is the long-boat, *chaloupe*, which is generally furniſhed with a maſt and ſails: thoſe which are fitted for ſhips of war, may be occaſionally decked, armed, and equipped, for cruiſing ſhort diſtances againſt merchant-ſhips of the enemy, or ſmugglers, or for impreſſing ſeamen, &c.

The barges are next in order, which are longer, ſlighter, and narrower: they are employed to carry the principal ſea-officers, as admirals, and captains of ſhips of war, and are very unfit for ſea. See the article BARGE.

Pinnaces exactly reſemble barges, only that they are ſomewhat ſmaller, and never row more than eight oars; whereas a barge properly never rows leſs than ten. Theſe are for the accommodation of the lieutenants, &c.

Cutters of a ſhip, (*bateaux*, Fr.) are broader, deeper, and ſhorter than the barges and pinnaces; they are fitter for ſailing, and are commonly employed in carrying ſtores, proviſions, paſſengers, &c. to and from the ſhip. In the ſtructure of this ſort of boats, the lower edge of every plank in the ſide over-lays the upper-edge of the plank below, which is called by ſhip-wrights clinch-work.

Yawls, (*canots*, Fr.) are ſomething leſs than cutters, nearly of the ſame form, and uſed for ſimilar ſervices; they are generally rowed with ſix oars.

The above boats more particularly belong to ſhips of war; as merchant-ſhips ſeldom have more than two, viz. a long-boat and yawl: when they

they have a third, it is generally calculated for the countries to which they trade, and varies in it's conſtruction accordingly.

Merchant-ſhips employed in the Mediterranean find it more convenient to uſe a lanch, which is longer, more flat-bottomed, and better adapted every way to the harbours of that ſea than a long-boat. See LANCH.

A wherry, (*diligence*, Fr.) is a light ſharp boat, uſed in a river or harbour for carrying paſſengers from place to place.

Punts, (*flette*, Fr.) are a ſort of oblong flat-bottomed boats, nearly reſembling floating ſtages; they are uſed by ſhipwrights and caulkers, for breaming, caulking, or repairing a ſhip's bottom.

A moſes is a very flat broad boat, uſed by merchant-ſhips amongſt the Carribbee-iſlands, to bring hogſheads of ſugar off from the ſea-beach to the ſhipping which are anchored in the roads.

A felucca is a ſtrong paſſage-boat uſed in the Mediterranean, from ten to ſixteen banks of oars. The natives of Barbary often employ boats of this ſort as cruiſers.

For the larger ſort of boats, ſee the articles CRAFT, CUTTER, PERIAGUA, and SHALLOP.

Of all the ſmall boats, a Norway yawl ſeems to be the beſt calculated for a high ſea, as it will often venture out to a great diſtance from the coaſt of that country, when a ſtout ſhip can hardly carry any ſail.

Trim the BOAT! (*barque-droit!* Fr.) the order to ſit in the boat in ſuch a manner as that ſhe ſhall float upright in the water, without leaning to either ſide.

To bale the BOAT, is to throw out the water which remains in her bottom or the well-room.

Moor the BOAT! the order to faſten a boat with two ropes, ſo as that the one ſhall counter-act the other.

For a repreſentation of ſome of the principal boats of a ſhip of war, ſee plate III. where fig. 1. exhibits the elevation, or ſide view, of a ten-oared barge; a a, it's keel; b, the ſtern-poſt; c, the ſtem; b c, the water-line, which ſeparates what is under the ſurface of the water from what is above it; e, the row-locks, which contain the oars between them; f, the top of the ſtern; g, the back-board; f g, the place where the cockſwain ſtands or ſits while ſteering the boat; l, the rudder, and m, the tiller, which is framed of iron.

Fig. 2. repreſents the plan of the ſame barge, where d is the 'thwarts, or ſeats where the rowers ſit to manage their oars; f, i, h, the ſtern-ſheets; i k, the benches whereon the paſſengers ſit in the ſtern-ſheets: the reſt is explained in fig. 1.

Fig. 3. is a ſtern view of the ſame barge, with the projection of all the timbers in the after-body; and fig. 4. a head view, with the curves of all the timbers in the fore-body.

Having thus explained the different views of the barge, the reader will eaſily comprehend the ſeveral correſponding parts in the other boats; where fig. 5 is the plan, and fig. 6 the elevation of a twelve-oared cutter that rows double banked: which, although ſeldom employed unleſs in capital ſhips, becauſe requiring twelve rowers, is nevertheleſs a very excellent

excellent boat, both for rowing and ſailing. Fig. 7 and 8 are the head and ſtern of this boat.

Fig. 9 is the plan of a long-boat, of which fig. 10 is the elevation, 11 the ſtern-view, and 12 the head-view.

BOAT-HOOK, an iron hook with a ſharp point on the hinder part thereof, to ſtick into a piece of wood, a ſhip's ſide, &c. It is ſtuck upon a long pole or ſhaft, (pl. III. fig. 1. n.) by the help of which a perſon in the boat may either hook any thing to confine the boat in a particular place, or puſh her off by the ſharp point attached to the back of the hook.

BOATSWAIN, (*contre-maître*, Fr.) the officer who has the boats, ſails, rigging, colours, anchors, and cables, committed to his charge.

It is the duty of the boatſwain particularly to direct whatever relates to the rigging of a ſhip, after ſhe is equipped from a royal dock-yard. Thus he is to obſerve that the maſts are properly ſupported by their ſhrouds, ſtays, and back-ſtays, ſo that each of thoſe ropes may ſuſtain a proportional effort when the maſt is ſtrained by the violence of the wind, or the agitation of the ſhip. He ought alſo to take care that the blocks and running-ropes are regularly placed, ſo as to anſwer the purpoſes for which they are intended; and that the ſails are properly fitted to their yards and ſtays, and well furled or reefed when occaſion requires.

It is likewiſe his office to ſummon the crew to their duty; to aſſiſt with his mates in the neceſſary buſineſs of the ſhip; and to relieve the watch when it expires. He ought frequently to examine the condition of the maſts, ſails, and rigging, and remove whatever may be judged unfit for ſervice, or ſupply what is deficient: and he is ordered by his inſtructions to perform this duty *with as little noiſe as poſſible*.

BOB-STAY, (*ſous-barbe*, Fr.) a rope uſed to confine the bowſprit of a ſhip downward to the ſtem, or cut-water. It is fixed by thruſting one of it's ends through a hole bored in the fore-part of the cut-water for this purpoſe, and then ſplicing both ends together ſo as to make it two-fold, or like the link of a chain: a *dead-eye* is then ſeized into it, and a *laniard* paſſing through this, and communicating with another dead-eye upon the bowſprit, is drawn extremely tight by the help of mechanical powers. See BOWSPRIT.

The uſe of the bob-ſtay, is to draw down the bowſprit, and keep it ſteady; and to counteract the force of the ſtays of the fore-maſt, which draw it upwards. The bowſprit is alſo fortified by ſhrowds from the bows on each ſide; which are all very neceſſary, as the fore-maſt and the upper-part of the main-maſt are ſtayed and greatly ſupported by the bowſprit. For this reaſon, the bob-ſtay is the firſt part of a ſhip's rigging which is drawn tight to ſupport the maſts. To perform this taſk more effectually, it is uſual to ſuſpend a boat, anchor, or other weighty body, at the bowſprit-end, to preſs it downwards during this operation.

BOLD, an epithet applied to the ſea-coaſt, ſignifying ſteep, or abrupt, ſo as to admit the approach of ſhipping without expoſing them to the danger of being run aground, or ſtranded.

BOLSTERS, (*chevet*, Fr.) a ſort of ſmall cuſhions or bags, filled with tarred canvas, laid between the collars of the ſtays and the edge of ſome

piece of wood on which they lie: they are uſed to preſerve the ſtays from being chafed or galled by the motion of the maſts, as the ſhip rolls or pitches at ſea.

BOLT, is generally a cylindrical pin of iron, of which there are various ſorts, (ſee plate II.) uſed for ſundry occaſions in ſhip-building.

The bolts are principally employed either to unite ſeveral members of a ſhip's frame into one ſolid piece, or to faſten any moveable body on a particular occaſion. Thoſe which are calculated for the former purpoſe have commonly ſmall round heads, ſomewhat flatted; on the contrary, the bolts which are intended for the latter uſe, have either a large round head, as thoſe of the chains, fig. 1. plate II. or an eye, with or without a ring in the ſame place, fig. 3. and 39, as thoſe which are deſigned to ſecure the great guns, the *jears* of the main-ſail and fore-ſail, the ſtoppers of the cables, &c.

The bolts are ſhort or long, according to the thickneſs of the timber wherein they are to be lodged: they penetrate either quite through the pieces into which they are driven, or to a certain determinate depth. The laſt of theſe, called a rag-bolt, is retained in it's ſituation by means of ſeveral barbs, fig. 2. which, faſtening into the timbers, prevent the bolt from looſening from it's ſtation by the working of the ſhip. The firſt, after being driven through the pieces it is intended to unite, is confined by a flat iron wedge, called the forelock, which is thruſt through a narrow hole in the ſmall end of the bolt, where it is hardened home by a hammer; and to prevent the forelock from cutting the wood-work in this poſition, a little iron ring is fixed over the end of the bolt, between the forelock and the timber.

Thoſe bolts, which have the largeſt of the round-heads, are called fender-bolts, being driven into the wales, ſtem, or ſides of ſome ſmall veſſels of burthen, as lighters, beancods, prames, &c. to defend their timber-work, from the ſhock of any other veſſels which may fall aboard by accident.

BOLT-ROPE, (*relingue*, Fr.) a rope to which the edges or ſkirts of the ſails are ſewed, to ſtrengthen and prevent them from rending. Thoſe parts of the bolt-rope, which are on the perpendicular or ſloping edges, are called leech-ropes; that at the bottom, the foot-rope; and that on the top or upper-edge, the head-rope. Stay-ſails, whoſe heads are formed like an acute angle, have no head-rope. To different parts of the bolt-rope are faſtened all the ropes employed to contract or dilate the ſails. The figure and poſition of the bolt-rope is exhibited in the plate referred to from the article SAIL.

BOMB. See the articles MORTAR and SHELL.

BOMB-VESSEL, (*bombarde*, Fr.) a ſmall ſhip particularly calculated to throw ſhells into a fortreſs. They are ſaid to be invented by M. Reyneau, and to have been firſt put in action at the bombardment of Algiers. Till then it had been judged impracticable to bombard a place from the ſea. See a particular deſcription of theſe ſhips in the article KETCH.

BONNET, an additional part laced to the bottom of the main-ſail and fore-ſail of ſome ſmall veſſels, in moderate winds.

BOOM, (*eſtacade*, *barre*, Fr. from *boom*, a tree, Dutch) in marine fortification, a ſtrong chain or cable, on which are faſtened a number of poles, bars, &c. extending athwart the mouth of a harbour or river, to prevent the enemies ſhips of war from entering. It may be occaſionally ſunk, or drawn up to the ſurface of the water, by capſterns, and other mechanical powers.

Boom-iron, is compoſed of two iron rings, formed into one piece, ſo as nearly to reſemble the figure of 8. It is employed to connect two cylindrical pieces of wood together, when the one is uſed as a continuation of the other; ſuch is the jib-boom to the bowſprit; and ſuch are the *ſtudding-ſail* booms to the reſpective yards from whoſe extremities they are prolonged. The rims, or circles of the boom-irons, are broad and flat; and one of them, which is firmly driven upon the main, or fore-yard-arm, is ſomewhat larger than the other, as exhibited in fig. 5. plate II. The ſtudding-ſail-boom uſually reſts in the ſmall ring, through which it is occaſionally thruſt outwards from the yard-arm, when the ſtudding-ſail is to be ſet. Every boom of this kind has, or ought to have, two boom-irons, one of which is fixed on the extremity of the yard, and the other further inward. The former of theſe is frequently framed of one ring only, which projects from the end of the yard, where it is faſtened by a ſtrong iron bar, opening into a ſort of fork or crotch that ſlides upon the yard lengthways, where it is faſtened by nails driven from above and below.

Booms, (*boute dehors*, Fr.) certain long poles run out from different places in the ſhip to extend the bottoms of particular ſails. Of theſe there are ſeveral ſorts; as the jib-boom, ſtudding-ſail-booms, ring-tail-boom, driver-boom, main-boom, and ſquare-ſail-boom; the two laſt, however, are only appropriated to ſmall ſhips of one or two maſts. See Jib, &c.

BOOT-TOPPING, the act of cleaning the upper-part of a ſhip's bottom, or that part which lies immediately under the ſurface of the water, and daubing it over with tallow, or with a *coat* or mixture of tallow, ſulphur, reſin, &c.

Boot-topping is chiefly performed where there is no dock, or other commodious ſituation for breaming or careening; or when the hurry of a voyage renders it inconvenient to have the whole bottom properly trimmed and cleanſed from the filth which gathers to it in the courſe of a ſea-voyage. It is executed by making the ſhip lean to one ſide, as much as they can with ſafety, and then ſcraping off the graſs, ſlime, ſhells, or other materials that adhere to the bottom, on the other ſide, which is elevated above the ſurface of the water for this purpoſe, and accordingly daubed with the coat of tallow and ſulphur. Having thus finiſhed one ſide, they make the ſhip lean to the other ſide, and perform the ſame operation, which not only preſerves the bottom from the worm, but makes the ſhip ſlide ſmoothly through the water. See Careen and Dock.

BORE. See the article Cannon.

BOTH SHEETS AFT, (*entre deux écoutes*, Fr.) the ſituation of a ſhip that ſails right afore the wind, or with the wind right aſtern.

BOTTOM, (*carene*, Fr. *botm*, Sax. *bodem*, Belg.) as a ſea-term, is either uſed to denote the bottom of a ſhip, or that of the water: thus in the former ſenſe we ſay, a clean or a foul bottom; a Britiſh, French, or Dutch bottom: and in the latter ſenſe, a rocky, ſandy, or oozy bottom.

The bottom of a ſhip, as we have deſcribed it in the article *Naval* ARCHITECTURE, comprehends all that part which is under water when the ſhip is laden; the figure of it muſt therefore be determined by the qualities required in the ſhip, and the purpoſes for which ſhe is deſigned.

It has been remarked, that a ſhip of war ſhould carry her loweſt tier of cannon ſufficiently above the ſurface of the water to be uſed when neceſſary. If this quality is neglected, a ſmall ſhip will have the advantage of a large one, inaſmuch as the latter cannot open her lower battery in a freſh ſide-wind, without being expoſed to extreme danger, by receiving a great quantity of water in at her ports between-decks.

A ſhip ſhould be duly poiſed, ſo as not to dive or pitch heavily, but go ſmoothly and eaſily through the water, riſing to the waves when they run high, or when the veſſel has reduced her ſail to the ſtorm. If ſhe is deficient in this article, the ſeas will frequently burſt aboard, and ſtrain the decks or carry away the boats. The maſts are alſo greatly endangered from the ſame cauſe.

A ſhip ſhould ſail well when large, or before the wind; but particularly when *cloſe-hauled*, or ſailing with a ſide-wind. She ſhould alſo be enabled in the latter ſituation to keep her wind, without deviating much to leeward; to work and tack eaſily, and lie in a turbulent ſea without ſtraining violently.

Many of our ſhipwrights have conſidered it extremely difficult, if not impracticable, to make a ſhip carry her cannon well, bear a competent ſail, and advance ſwiftly through the water; becauſe a very full bottom is neceſſary to acquire the two firſt qualities; whereas a ſharp floor is better fitted to procure the latter. But when it is remembered, that a full ſhip will carry a much greater force of ſail than a ſharp one, a good artiſt may form the body ſo as to unite all theſe three qualities with the additional one of ſteering eaſily, by paying a proper attention to the following general rules.

To make a ſhip carry a good ſail. A flat floor-timber ſomewhat long, or the lower-futtocks pretty round, a ſtraight upper-futtock, the top-timber to throw out the breadth aloft; at any rate to carry the main-breadth as high as the lower-deck. Now if the rigging be well adapted to ſuch a body, and the upper-works lightened as much as poſſible, ſo that the whole contributes to lower the center of gravity, there will be no reaſon to doubt of the ſhip's carrying a good ſail.

To make a ſhip ſteer well, and anſwer the helm readily. If the faſhion-pieces be well formed, the tuck, or ſpreading-parts under the ſtern, carried pretty high; the mipſhip-frame well forward; a conſiderable additional depth in the draught of water abaft more than forward; a great rake forward and none abaft; a ſnug quarter-deck and forecaſtle: all theſe will greatly facilitate the ſteerage; and a ſhip that ſails well will always ſteer eaſily.

To make a ſhip carry her guns well out of the water. A long floor-timber, and not of great riſing; a very full midſhip-frame, and low tuck, with light upper-works.

To make a ſhip go ſmoothly through the water, and prevent her from pitching heavily. A long keel; a long floor; not to riſe too high afore and abaft; but the area, or ſpace contained in the fore-body, according to the reſpective weight it is deſtined to carry: all theſe are neceſſary to make a ſhip paſs eaſily through the ſea.

To make a ſhip keep a good wind and drive little to leeward. A good length by the keel; not too broad, but pretty deep in the hold, which will occaſion her to have a ſhort floor-timber and a very great riſing. As ſuch a ſhip will meet with great reſiſtance in driving ſideways, and feel very little in advancing or going ahead, ſo will fall very little to leeward.

Being thus furniſhed with the methods to qualify a ſhip for the different purpoſes of navigation, the only difficulty remains to apply them properly in the conſtruction, which muſt, in a great meaſure, be left to the judgment of the artiſt. The whole art then is evidently to form the body in ſuch a manner, as that none of theſe qualities ſhall be entirely deſtroyed; and in giving the preference to that which is principally required in the ſervice for which the ſhip is deſtined. As it therefore appears poſſible to unite them all in one veſſel, ſo that each of them may be eaſily diſcerned, a neglect of this circumſtance ought to be attributed to the incapacity of the ſhipwright, who has not ſtudied the principles of his art with proper application. See *Naval* ARCHITECTURE, BUILDING, and SHIP.

BOTTOMRY, *(bomerie*, Fr. from *bottom)* a contract for borrowing money on the keel or bottom of a ſhip; ſo that the commander binds the ſhip herſelf, that if the money be not paid at the time appointed, the creditors ſhall have the ſhip.

BOTTOMRY is alſo where a perſon lends money to a merchant or adventurer who wants it in traffic, and the lender is to be paid a much greater ſum at the return of the ſhip, ſtanding to the hazard of the voyage. Although the intereſt on this account be greater than the law commonly allows, it is yet not eſteemed uſury; becauſe the money being ſupplied at the lender's riſk, if the ſhip periſhes, he ſhares in the loſs thereof.

BOW, *(epaule*, Fr.) in ſhip-building, the rounding part of a ſhip's ſide forward, beginning at the place where the planks arch inwards, and terminating where they cloſe at the ſtem or prow. See the article HEAD, where the bow of a ſhip is repreſented at large. It is proved by a variety of experiments, that a ſhip with a narrow bow is much better calculated for ſailing ſwiftly, than one with a broad bow; but is not ſo well fitted for a high ſea, into which ſhe always *pitches*, or plunges, her fore-part very deep, for want of ſufficient breadth to repel the volume of water, which ſhe ſo eaſily divides in her fall. The former of theſe is called by ſeamen a *lean*, and the latter a *bluff* bow.

" The

" The bow which meets with the leaſt reſiſtance, in a direct courſe, not only meets with the leaſt reſiſtance in oblique courſes, but alſo has the additional property of driving the leaſt to leeward; which is a double advantage gained by forming the bow ſo as to give it that figure which will be the leaſt oppoſed in moving through any medium." *Bouguer's Traité du Navire.*

On the Bow, in navigation, an arch of the horizon, comprehended between ſome diſtant object and that point of the compaſs which is right ahead, or to which the ſhip's ſtem is directed. This phraſe is equally applicable, when the object is beheld from the ſhip, or diſcovered by trigonometrical calculation: as, we ſaw a fleet at day-break bearing three points *on the ſtarboard bow*; that is, three points from that part of the horizon which is right ahead, towards the right hand. See alſo the article Bearing.

BOWER. See the article Anchor.

BOWLINE, *(bouline*, Fr.) a rope faſtened near the middle of the leech, or perpendicular edge of the ſquare ſails, by three or four ſubordinate parts, called bridles. It is only uſed when the wind is ſo unfavourable that the ſails muſt be all braced ſideways, or *cloſe-hauled* to the wind: in this ſituation the bowlines are employed to keep the weather, or windward, edges of the principal ſails tight forward and ſteady, without which they would be always ſhivering, and rendered incapable of ſervice. See the articles Bridle, Close-hauling, and Sail.

To check the Bowline, is to ſlacken it, when the wind becomes large.

To BOWSE, *(palanquer*, Fr.) to draw on any body with a tackle, or complication of pullies, in order to remove it, or otherwiſe alter it's ſtate or ſituation: this is chiefly practiſed when ſuch alteration or removal cannot be conveniently effected without the application of mechanical powers. This term is pronounced *bowce.*

BOWSPRIT, *(beaupré*, Fr. from *bow* and *ſprit)* a large boom or maſt, which projects over the ſtem, to carry ſail forward, in order to govern the fore-part of a ſhip, and counteract the force of the ſails extended behind, or, in the *after* part. It is otherwiſe of great uſe, as being the principal ſupport of the fore-maſt, by confining the *ſtays* whereby it is ſecured and enabled to carry ſail: theſe are great ropes ſtretching from the maſt-head to the middle of the bowſprit, where they are drawn tight. See the articles Stay and Dead-eye.

BOXES *of the pump.* See the article Pump.

BOX-HAULING, in navigation, a particular method of veering a ſhip, when the ſwell of the ſea renders tacking impracticable. It is performed by putting the helm *a-lee*, to throw the head up to windward, where meeting with great reſiſtance from the repeated ſhocks of the waves on the weather bow, it *falls off*, or turns to leeward, with a quicker effort, and without advancing. The aftermoſt ſails are at this time diminiſhed, or perhaps altogether deprived of their force of action, for a ſhort time, becauſe they would otherwiſe counteract the ſails forward, and prevent the ſhip from turning. They are, however, extended as ſoon as

the ſhip, in veering, brings the wind on the oppoſite quarter, as their effort then contributes to aſſiſt her motion of wheeling.

Box-HAULING is generally performed when the ſhip is too near the ſhore to have room for veering in the uſual way. See VEERING.

BOXING, an operation in ſailing ſomewhat ſimilar to box-hauling. It is performed by laying the head-ſails, or the ſails in the fore-part of the ſhip, aback, to receive the greateſt force of the wind in a line perpendicular to their ſurfaces, in order to throw the ſhip's head back into the line of her courſe, after ſhe had inclined to windward of it by neglect of the helmſman, or otherwiſe.

BRACE, (*bras*, Fr.) a rope employed to wheel, or traverſe the ſails upon the maſt, in a direction parallel to the horizon, when it is neceſſary to ſhift the ſails, that they may correſpond with the direction of the wind and the courſe of the ſhip. Braces are, for this purpoſe, faſtened to the extemities of the yards, which are called the *yard-arms*.

All the braces of the yards are double, except thoſe of the top-gallant and ſpritſail-topſail yards. The mizen-yard is furniſhed with *fangs*, or vangs, in the room of braces. See the article MIZEN.

BRACKETS, (*conſoles*, Fr.) ſhort crooked timbers reſembling knees. They are fixed under the galleries and frame of a ſhip's head, to ſupport the gratings.

BRAILS, (*cargues*, *breuils*, Fr.) certain ropes paſſing through pullies on the mizen-maſt, and afterwards faſtened, in different places, on the hinder, or aftmoſt ridge of the ſail, in order to truſs it up to the maſt, as occaſion requires. See MIZEN.

BRAILS, is likewiſe a general name given to all the ropes which are employed to *haul up*, or collect to their yards, the bottoms, lower corners, and ſkirts of the other great ſails, for the more ready *furling* them whenever it ſhall be neceſſary. The operation of thus drawing them together, is called brailing them up, or hauling them up in the brails. See the article SAIL.

BRAKE, (*brimbale*, Fr.) the handle, or lever, by which a common ſhip-pump is uſually managed. It operates by means of two iron bolts thruſt through the inner end of it; one of which reſting acroſs two cheeks or ears, in the upper end of the pump, ſerves as a fulcrum for the brake, ſupporting it between the cheeks. The other bolt connects the extremity of the brake to the pump-ſpear, which draws up the *box*, or piſton, charged with the water in the tube. See the article PUMP.

BREADTH, (*largeur*, Fr.) the meaſure of a ſhip from ſide to ſide in any particular place: it is uſually diſtinguiſhed into extreme-breadth, *ligne du fort*, main-breadth, and top-timber-breadth. See the explanation of the plane of projection, in the article *Naval* ARCHITECTURE.

As the ſides of the ſhip are formed by a variety of ribs, called timbers, and the areas of thoſe timbers being of different breadths above and below, it is neceſſary to diſtinguiſh them in the conſtruction, in order to form their ſeveral curves, and fix the correſponding pieces with more accuracy and preciſion. The part of every timber which encloſes the greateſt

ſpace

ſpace from the middle-line of the ſhip's length, is therefore called the *main*-breadth; and the diſtance between the upper-part of the ſame timber and the middle-line of the ſhip's length, is called the top-timber-breadth.

As the ſhip is alſo broader at the midſhip-frame than in any other point of her length, the diſtance between her ſides in the main-breadth of that timber, is called the extreme-breadth of the ſhip.

BREADTH-SWEEP, the radius of the arch which forms part of the curve of a ſhip's timber; as explained in the horizontal plane. See *Naval* ARCHITECTURE.

BREAKERS, (*briſans*, Fr.) a name given by ſailors to thoſe billows that break violently over rocks lying under the ſurface of the ſea. They are diſtinguiſhed both by their appearance and ſound, as they cover that part of the ſea with a perpetual foam, and produce a hoarſe and terrible roaring, very different from what the waves uſually have in a deeper bottom.

When a ſhip is unhappily driven amongſt breakers, it is hardly poſſible to ſave her, as every billow that heaves her upwards ſerves to daſh her down with additional force, when it breaks over the rocks or ſands beneath it.

BREAKING-BULK, the act of beginning to unlade a ſhip; or of diſcharging the firſt part of the cargo.

To BREAK-UP, (*déchirer*, Fr.) to rip off the planks of a ſhip, and take her to pieces, when ſhe becomes old and unſerviceable.

BREAK-WATER, the hulk, or hull, of ſome old ſhip or veſſel, ſunk at the entrance of a ſmall harbour, to break off, and diminiſh the force of the waves, as they advance towards the veſſels moored within.

BREAK-WATER is alſo a ſort of ſmall buoy, faſtened to a large one in the water, when the buoy-rope of the latter is not long enough to reach from the anchor, lying at the bottom, to the ſurface of the water. The uſe of this break-water is therefore to ſhew where the buoy ſwims. See BUOY.

To BREAM, *chauffer*, Fr. from *broom*) to burn off the filth, ſuch as graſs, ooze, ſhells, or ſea-weed, from a ſhip's bottom, that has gathered to it in a voyage, or by lying long in a harbour. This operation is performed by holding kindled furze, faggots, or ſuch materials, to the bottom, ſo that the flame incorporating with the pitch, ſulphur, &c. that had formerly covered it, immediately looſens and throws off whatever filth may have adhered to the planks. After this, the bottom is covered anew with a compoſition of ſulphur, tallow, &c. which not only makes it ſmooth and ſlippery, ſo as to divide the fluid more readily, but alſo poiſons and deſtroys thoſe worms which eat through the planks in the courſe of a voyage. Breaming may be performed either when the ſhip lies aground after the tide has ebbed from her, or by *docking*, or by *careening*, which ſee; as alſo COAT and STUFF.

BREAST-FAST, a ſort of hawſer, or large rope, employed to confine a ſhip ſidewiſe to a wharf or quay, or to ſome other ſhip; as the head-faſt confines her forward, and the ſtern-faſt, abaft.

BREAST-

BREAST-HOOKS, *(guirlandes*, Fr. from *breaſt* and *hook)* are thick pieces of timber, incurvated into the form of knees, and uſed to ſtrengthen the fore-part of the ſhip, where they are placed at different heighths directly acroſs the ſtem, ſo as to unite it with the bows on each ſide.

The breaſt hooks are ſtrongly connected to the ſtem and hawſe-pieces by tree-nails, and by bolts, driven from without, through the planks and hawſe-pieces, and the whole thickneſs of the breaſt-hooks, upon whoſe inſide thoſe bolts are forelocked, or clinched, upon rings. They are uſually about one-third thicker, and twice as long, as the knees of the decks which they ſupport.

There are generally four or five of theſe pieces in the hold between the kelſon and the lower-deck, in the form of R, (plate I. PIECES *of the* HULL), upon the uppermoſt of which the planks of that deck are rabitted. There are two placed between the lower and the ſecond decks, in the form of S, (plate I.), one of which is immediately beneath the hawſe-holes, and the other under the ſecond deck, whoſe planks are inlaid thereon, and upon which the inner-end of the bowſprit frequently reſts.

The fore-ſide of the breaſt-hook, which is convex, is formed ſo as to correſpond with the place in which it is ſtationed, that is to ſay, it conforms exactly to the interior figure of that part of the bow where it ought to be fayed: accordingly the branches, or arms, of the breaſt-hooks, make a greater angle as they are more elevated above the keel, whilſt the lower ones are more incurvated, and are almoſt figured like the crotches.

As it is not neceſſary that the inner, or concave, ſide of theſe pieces, ſhould retain a regular form, the artificers frequently let them remain as thick as poſſible, to give additional ſupport to the ſhip's-fore part, where ſhe ſuſtains the whole ſhock of reſiſtance in dividing the fluid, or in plungeing down into it.

It is evident that the connexion and ſolidity of the ſhip in this place will be reinforced in proportion to the ſtrength and extent of the breaſt-hooks, ſo that they may cover a greater number of the head-timbers.

BREAST-WORK, *(fronteau*, Fr.) a ſort of baluſtrade or fence, compoſed of rails or mouldings, and frequently decorated with ſculpture. It is uſed to terminate the quarter-deck and poop at the fore-ends, and to incloſe the forecaſtle both before and behind.

BREECHING, *(brague*, Fr. from *breech)* a rope uſed to ſecure the cannon of a ſhip of war, and prevent them from recoiling too much in the time of battle.

It is fixed by faſtening the middle of it to the hindmoſt knob or caſcabel of the gun, which ſailors call the pomiglion, or pummelion; the two ends of it are afterwards inſerted through two ſtrong rings on the ſides of the carriage, and faſtened to other bolts in the ſhip's ſides.

The breeching is of ſufficient length to let the muzzle of the cannon come within the ſhip's ſide to be charged.

The uſe of the breeching, as it checks the recoil of the cannon, is ſhewn in plate III. DECK, where it is expreſſed by e e, paſſing through the ring-bolts, f, on the ſide of the carriage, g, being faſtened to the caſcabel, h. It is alſo exhibited in the MIDSHIP-FRAME, where it is employed to laſh the cannon when it is *houſed* during the courſe of a voyage. See the article CANNON.

BREEZE, (*briſe*, Fr.) a freſh gale.

BREWING, the appearance of a collection of black and tempeſtuous clouds ariſing gradually from a particular part of the hemiſphere, as the fore-runner of a ſtorm.

BRIDLES, the upper-part of the moorings laid in the king's harbours to ride ſhips or veſſels of war. See the article MOORINGS.

BRIDLES *of the bowline*, (*pattes*, Fr.) the legs by which the bowline is faſtened to different places on the edge or ſkirt of a large ſail.

We have already explained the uſe of the *bowline*; that it is employed to confine or keep ſteady the windward or weather edges of the principal ſails when they are braced for a ſide-wind. For as the current of air enters the cavity of the ſail in a direction nearly parallel to it's ſurface, it follows that the ridge of the ſail muſt neceſſarily be ſhaken by the wind, unleſs it is kept tight forward; but as a ſingle rope has not been found ſufficient to confine the whole ſkirt of the ſail, inaſmuch as it only draws upon one part thereof, it became neceſſary to apply bridles or legs ſpreading out from the bowline. They are repreſented in the figures annexed to the article SAIL.

BRIG, or BRIGANTINE, a merchant-ſhip with two maſts. This term is not univerſally confined to veſſels of a particular conſtruction, or which are maſted and rigged in a method different from all others. It is variouſly applied, by the mariners of different European nations, to a peculiar ſort of veſſel of their own marine.

Amongſt Engliſh ſeamen, this veſſel is diſtinguiſhed by having her main-ſail ſet nearly in the plane of her keel; whereas the main-ſails of larger ſhips are hung athwart, or at right angles with the ſhip's length, and faſtened to a yard which hangs parallel to the deck: but in a brig, the foremoſt edge of the main-ſail is faſtened in different places to hoops which encircle the main-maſt, and ſlide up and down it as the ſail is hoiſted or lowered: it is extended by a *gaff* above, and by a boom below.

To BRING *by the lee*. See *To* BROACH-TO.

To BRING-TO, (*capoſer*, Fr.) in navigation, to check the courſe of a ſhip when ſhe is advancing, by arranging the ſails in ſuch a manner as that they ſhall counter-act each other, and prevent her either from retreating or moving forward. In this ſituation the ſhip is ſaid to lie-by, or lie-to, having, according to the ſea-phraſe, ſome of her ſails *aback*, to oppoſe the force of thoſe which are *full*; or having them otherwiſe ſhortened by being *furled*, or *hauled up in the brails*.

BRINGING-TO, is generally uſed to detain a ſhip in any particular ſtation, in order to wait the approach of ſome other that may be advancing towards

her: or to retard her courſe occaſionally near any port in the courſe of a voyage.

To BRING-UP, a provincial phraſe peculiar to the ſeamen in the coal-trade, ſignifying to anchor, &c.

To BROACH-TO, in navigation, to incline ſuddenly to windward of the ſhip's courſe when ſhe ſails with a large wind; or, when ſhe ſails directly before the wind, to deviate from the line of her courſe, either to the right or left, with ſuch rapidity as to bring the ſhip's ſide unexpectedly to windward, and expoſe her to the danger of overſetting.

It is eaſy to conceive that a ſhip will carry much more ſail before the wind than when ſhe makes a progreſs with her ſide to it's direction; becauſe when the current of wind acts nearly endways on her hull, the preſſure of it on the maſts muſt be conſiderably diminiſhed as ſhe yields to it's impulſe and flies before it; and that if ſhe carries a great ſail at this time, it can only preſs her fore-part lower down in the water. But if, when ſhe carries a great extenſion of ſail, her ſide is ſuddenly brought to the wind, it may be attended with the moſt fatal conſequences, as the whole force of it then pours like a torrent into the cavities of the ſails. The maſts therefore unavoidably yield to this ſtrong impreſſion, acting like levers on the ſhip ſideways, ſo as nearly to overturn her, unleſs ſhe is relieved by ſome other event, which may be alſo extremely pernicious, ſuch as the ſails rending to pieces, or the maſts being carried away.

It is generally occaſioned by the difficulty of ſteering the ſhip; by the negligence or incapacity of the helmſman; or by ſome diſaſter happening to the helm or it's machinery, which renders it incapable of governing the ſhip's courſe.

The difference between broaching-to and bringing *by the lee*, may be thus defined. Suppoſe a ſhip with a great ſail ſet is ſteering ſouth, having the wind N. N. W. then is weſt the *weather*, and eaſt the *lee-ſide*.

If by ſome deficiency in the ſteerage her head turns round to the weſtward, ſo as that her ſails are all taken aback on the weather-ſide before ſhe can be made to return to the courſe from which ſhe has deviated, ſhe is ſaid to *broach-to*.

If otherwiſe her head, from the ſame cauſe, has declined ſo far eaſtward as to lay her ſails aback on that ſide which was the lee-ſide, it is called bringing her by the lee.

BROADSIDE, (*bordée*, Fr.) in a naval engagement, the whole diſcharge of the artillery on one ſide of a ſhip of war above and below; as,

We poured a broadſide into the enemy's ſhip, i. e. diſcharged all the ſhip's cannon on one ſide upon her.

She brought her broadſide to bear on the caſtle; that is, diſpoſed the ſhip ſo as to point all her cannon to it within point-blank range.

A ſquall of wind laid the ſhip on her broadſide; that is, preſſed her down in the water, ſo as nearly to overſet her.

BROKEN-BACKED, (*arqué*, Fr.) the ſtate or quality of a ſhip, which is ſo looſened in her frame, either by age, weakneſs, or ſome great ſtrain, as to droop at each end.

This circumſtance is more common amongſt French than the Engliſh or Dutch ſhips, owing partly to their great length, and to the ſharpneſs of the floor, whoſe breadth is not ſufficiently carried from the middle towards each end; and partly from being frequently obliged to have a great weight in both ends, when they are empty in the middle, at the time of diſcharging one cargo and taking in another. See CAMBERING.

BUCCANEER, a name given to certain piratical rovers of various European nations, who formerly infeſted the Spaniſh coaſts in America, and, under pretence of traffic with the inhabitants, frequently ſeized their treaſure, plundered their houſes, and committed many other depredations.

Ship-BUILDING may be defined the manner of conſtructing ſhips, or the work itſelf, as diſtinguiſhed from naval architecture, which we have rather conſidered as the theory or art of delineating ſhips on a plane, and to which this article may properly be underſtood as a ſupplement.

The pieces, by which this complicated machine is framed, are joined together in various places, by ſcarfing, rabitting, tenenting, and ſcoring. See thoſe articles.

During the conſtruction of a ſhip, ſhe is ſupported in the dock, or upon a wharf, by a number of ſolid blocks of timber placed at equal diſtances from, and parallel to, each other, as may be ſeen in the article LANCHING; ſhe is then ſaid to be on the ſtocks.

The firſt piece of timber laid upon the blocks is generally the keel. I ſay *generally*, becauſe, of late, a different method has been adopted in ſome of the royal dock-yards, by beginning with the floor-timbers; the artiſts having found that the keel is often apt to rot during the long period of building a large ſhip of war. The pieces of the keel, as exhibited in plate I. are ſcarfed together, and bolted, forming one entire piece, A A. which conſtitutes the length of the veſſel below. At one extremity of the keel is erected the *ſtem*. It is a ſtrong piece of timber incurvated nearly into a circular arch, or, according to the technical term, *compaſſing*, ſo as to project outwards at the upper end, forming what is called the *rake* forward. In ſmall veſſels this is framed of one piece, but in large ſhips it is compoſed of ſeveral pieces ſcarfed and bolted together, as expreſſed in the explanation of plate I. PIECES *of the* HULL, and in thoſe terms ſeparately. At the other extremity of the keel, is elevated the ſtern-poſt, which is always of one entire ſtrait piece. The heel of it is let into a mortiſe in the keel, and it's upper-end hangs outwards, making an obtuſe angle with the keel, like that of the ſtem: this projection is called the *rake* abaft. The ſtern-poſt, which ought to ſupport the ſtern, contains the iron-work or hinges of the rudder, which are called *googings*, and unites the lower-part of the ſhip's ſides abaft. See the connexion of thoſe pieces in the ELEVATION, plate I.

Towards the upper-end of the ſtern-poſt, and at right angles with it's length, is fixed the middle of the *wing-tranſom*, where it is firmly bolted.

Under

Under this is placed another piece parallel thereto, and called the deck-tranſom, upon which the after-end of the lower-deck is ſupported. Parallel to the deck-tranſom, and at a proper diſtance under it, another piece is fixed to the ſtern-poſt, called the firſt tranſom, all of which ſerve to connect the ſtern-poſt to the *faſhion-pieces*. Two more tranſoms, called the ſecond and third, are alſo placed under theſe, being likewiſe attached to the faſhion-pieces, into which the extremities of all the tranſoms are let, as exhibited in plate X. fig. 1. The faſhion-pieces are formed like the other timbers of the ſhip, and have their heels reſting on the upper-part of the kelſon, at the after extremity of the floor-ribbands.

All theſe pieces, viz. the tranſoms, the faſhion-pieces, and their top-timbers, being ſtrongly united into one frame, are elevated upon the ſtern-poſt, and the whole forms the ſtructure of the ſtern, upon which the galleries and windows, with their ornaments, are afterwards built.

The ſtem and ſtern-poſt being thus elevated upon the keel, to which they are ſecurely connected by knees and arched pieces of timber bolted to both; and the keel being raiſed at it's two extremities by pieces of dead-wood, the midſhip *floor-timber* is placed acroſs the keel, whereto it is bolted through the middle. The floor-timbers before and abaft the midſhip-frame are then ſtationed in their proper places upon the keel; after which the *kelſon*, which, like the keel, is compoſed of ſeveral pieces ſcarfed together, is fixed acroſs the middle of the floor-timbers, to which it is attached by bolts driven through the keel, and clinched on the upper-part of the kelſon. The futtocks are then raiſed upon the floor-timbers, and the *hawſe-pieces* erected upon the cant-timbers in the fore-part of the ſhip. The top-timbers on each ſide are next attached to the head of the futtocks, as already explained in the article *Naval* Architecture. The frames of the principal timbers being thus completed, are ſupported by ribbands, as exhibited in the plate referred to from the article Ribbands.

The ribs of the ſhip being now ſtationed, they proceed to fix on the planks, of which the wales are the principal, being much thicker and ſtronger than the reſt; as is repreſented in the Midship-frame. The harpins, which may be conſidered as a continuation of the wales at their fore-ends, are fixed acroſs the hawſe-pieces, and ſurround the fore-part of the ſhip. The planks that incloſe the ſhip's ſides are then brought about the timbers, and the *clamps*, which are of equal thickneſs with the wales, fixed oppoſite to the wales within the ſhip; theſe are uſed to ſupport the ends of the beams, and accordingly ſtretch from one end of the ſhip to the other. The *thick ſtuff*, or ſtrong planks of the bottom within-board, are then placed oppoſite to the ſeveral ſcarfs of the timbers, to reinforce them throughout the ſhip's length. The planks employed to line the ſhip, called the *ceiling*, or *foot-waling*, is next fixed in the intervals between the thick-ſtuff of the hold. The *beams* are afterwards laid acroſs the ſhip to ſupport the decks, and are connected to the ſide by lodging and hanging knees; the former of which are exhibited in their proper ſtations in plate III. F. and the hanging ones, together with the breadth, thickneſs,

and poſition of the keel, floor-timbers, futtocks, top-timbers, wales, clamps, thick-ſtuff, planks within and without, beams, decks, &c. are ſeen in the MIDSHIP-FRAME.

The cable-bits being next erected, the *carlings* and *ledges*, which are repreſented in plate III. and deſcribed in their proper places, are diſpoſed between the beams to ſtrengthen the deck. The *water-ways* are then laid on the ends of the beams throughout the ſhip's length, and the ſpirketting fixed cloſe above them. The upper-deck is then planked, and the *ſtring* placed under the *gunnel* or *planſheer* in the waiſt. The diſpoſition of thoſe latter pieces on the timbers, viz. the water-ways, ſpirketting, upper-deck, ſtring, and gunnel, are alſo repreſented in the MIDSHIP-FRAME.

They proceed next to plank the quarter-deck and forecaſtle, and to fix the *partners* of the maſts and capſterns with the *coamings* of the hatches. The *breaſt-hooks* are then bolted acroſs the ſtem and bow within-board, the *ſtep* of the fore-maſt placed on the kelſon; and the *riders*, exhibited in the MIDSHIP-FRAME, fayed on the inſide of the timbers to reinforce the ſides in different places of the ſhip's length. The *pointers*, if any, are afterwards fixed acroſs the hold diagonally to ſupport the beams; and the *crotches* ſtationed in the after-hold to unite the half-timbers. The *ſteps* of the main-maſt and capſterns are next placed; the planks of the lower-decks and orlop laid; the *navel-hoods* fayed on the hawſe-holes; and the *knee of the head*, or cutwater connected to the ſtem. The figure of the head is then erected, and the *trail-board* and cheeks fixed on the ſides of the knee.

The *taffarel* and *quarter-pieces*, which terminate the ſhip abaft, the former above and the latter on each ſide, are then diſpoſed; and the ſtern and quarter galleries framed and ſupported by their brackets. The *pumps*, with their well, are next fixed in the hold; the *limber-boards* laid on each ſide of the kelſon, and the *garboard-ſtrake* fixed on the ſhip's bottom next to the keel without.

The hull being thus fabricated, they proceed to ſeparate the apartments by *bulk-heads*, or partitions; to frame the *port-lids*; to fix the *cat-heads* and *cheſs-trees*; to form the *hatchways* and *ſcuttles*, and fit them with proper covers or *gratings*. They next fix the ladders whereby to mount or deſcend the different hatchways, and build the *manger* on the lower deck, to carry off the water that runs in at the hawſe-holes when the ſhip rides at anchor in a ſea. The bread-room and magazines are then lined, and the *gunnel*, *rails*, and *gangways*, fixed on the upper-part of the ſhip. The *cleats*, *kevels*, and *ranges*, by which the ropes are faſtened, are afterwards bolted or nailed to the ſides in different places.

The *rudder*, being fitted with it's irons, is next hung to the ſtern-poſt; and the *tiller*, or bar, by which it is managed, let into a mortiſe at it's upper-end. The *ſcuppers*, or leaden tubes, that carry the water off from the decks, are then placed in holes cut through the ſhip's ſides; and the *ſtandards*, repreſented in the MIDSHIP-FRAME, bolted to the beams and ſides above the decks to which they belong. The poop-lanthorns are laſt fixed upon their cranes over the ſtern, and the bilge-ways, or cradles, placed

placed under the bottom, to conduct the ſhip ſteadily into the water whilſt lanching.

As the various pieces, which have been mentioned above, are explained at large in their proper places, with references to their figures according to the plan of this work, it would have been ſuperfluous to have entered into a more particular deſcription of them here. It may, however, be neceſſary to obſerve, that as the theory ought always to precede the practice, this article would probably be much better underſtood by previouſly reading that of *Naval* ARCHITECTURE, which may be conſidered as a proper introduction to it.

BUILT, *(fabrique*, Fr.) the particular form or ſtructure of a ſhip, by which ſhe is diſtinguiſhed from others of a different claſs or nation. Thus a ſhip is ſaid to be frigate-built, galley-built, a hag-boat, a pink, a cat, &c. or to be Engliſh-built, French-built, American-built, &c.

In-BULK. See LADEN.

BULK-HEADS, certain partitions, or walls, built up in ſeveral places of a ſhip between two decks, either lengthwiſe or acroſs, to form and ſeparate the various apartments. Some of thoſe which are built acroſs the ſhip are remarkably ſtrong. See the article CLOSE-QUARTERS.

BULL'S-EYE, *(coſſe*, Fr.) a ſort of ſmall pulley in the form of a ring, having a rope ſpliced round the outer edge of it, (which is hollowed to admit of the rope) and a large hole in the middle for another rope to ſlide in. It is ſeldom uſed but for the main and fore bowline-bridles of ſome ſhips, particularly by the colliers of Northumberland, &c. It is ſpliced in the outer-end of the bowline, and ſliding along the bridle, to reſt in the moſt appoſite place, draws it tight above and below. This implement is more frequently uſed by Dutch than Engliſh ſeamen.

BUM-BOAT, a ſmall boat uſed to ſell vegetables, &c. to ſhips lying at a diſtance from the ſhore.

BUMKIN, or BOOMKIN, *(boute-lof*, Fr.) a ſhort boom or bar of timber, projecting from each *bow* of a ſhip, to extend the lower-edge of the foreſail to windward; for which purpoſe there is a large block fixed on it's outer end, through which the rope is paſſed that is faſtened to the lower-corner of the ſail to windward, called the *tack*; and this being drawn tight down brings the corner of the ſail cloſe to the block, which being performed, the *tack* is ſaid to be *aboard*.

The bumkin is ſecured by a ſtrong rope which confines it downward to the ſhip's bow, to counter-act the ſtrain it bears from the fore-ſail above, dragging it upwards.

BUNT, the middle-part, or cavity of the principal ſquare ſails, as the main-ſail, fore-ſail, top-ſails, and top-gallant-ſails. If one of thoſe ſails is ſuppoſed to be divided into four equal parts, from one ſide to the other, then may the two middle diviſions, which comprehend half of the ſail, be properly called the limits of the bunt.

BUNTINE, *(etamine*, Fr.) a thin woollen ſtuff, of which the colours and ſignals of a ſhip are uſually formed.

BUNTLINES,

BUNTLINES, *(cargues fond*, Fr.) are ropes faſtened to the bottoms of the ſquare ſails, to draw them up to the yards: they are inſerted through certain blocks above, or on the upper-part of the yard, whence paſſing downwards on the fore-part of the ſail, they are faſtened below to the lower-edge in ſeveral places of the *bolt rope*.

BUOY, *(bouée*, Fr.) a ſort of cloſe caſk, or block of wood, faſtened by a rope to the anchor, to determine the place where the anchor is ſituated, that the ſhip may not come too near it, to entangle her cable about the ſtock, or the flukes of it.

Buoys are of various kinds; as,

Can-Buoys; theſe are in the form of a cone, (ſee plate II. fig. 6.) and of this conſtruction are all the buoys which are floated over dangerous banks and ſhallows, as a warning to paſſing ſhips, that they may avoid them. They are extremely large, that they may be ſeen at a diſtance, and are faſtened by ſtrong chains to the anchors which are ſunk for this purpoſe at ſuch places.

Nun-Buoys, are ſhaped like the middle fruſtum of two cones, abutting upon one common baſe, (plate II. fig. 7.) being caſks, which are large in the middle, and tapering, nearly to a point, at each end.

Wooden-Buoys, are ſolid pieces of timber, ſometimes in the ſhape of a cylinder, and ſometimes of a nun-buoy; they are furniſhed with one or two holes, in which to fix a ſhort piece of rope, whoſe two ends being ſpliced together make a ſort of circle or ring called the ſtrop.

Cable-Buoys, common caſks employed to buoy up the cables in different places from any rocky ground. In the harbour of Alexandria, in Egypt, every ſhip is moored with at leaſt three cables, and has three or four of theſe buoys on each cable for this purpoſe.

BUOY-ROPE, the rope which faſtens the buoy to the anchor: it ſhould be little more than equal in length to the depth of the water where the anchor lies, as it is intended to float near, or immediately above the bed of it, that the pilot may at all times know the ſituation thereof. See plate I. fig. 6. b is the anchor, c the buoy-rope, and d the buoy floating on the ſurface of the water.

The Buoy-Rope is often extremely uſeful otherwiſe, in drawing up the anchor when the cable is broke. It ſhould therefore be always of ſufficient ſtrength for this purpoſe, or elſe the anchor may be loſt through negligence.

Slings of the Buoy, the ropes which are faſtened about it, and by which it is hung: they are curiouſly ſpliced round it, ſomething reſembling the braces of a drum.

To ſtream the Buoy, is to let it fall from the ſhip's ſide into the water, which is always done before they let go the anchor, that it may not be retarded by the buoy-rope as it ſinks to the bottom.

BURTHEN, or Burden, *(port*, Fr. *byrthen*, Sax.) the weight or meaſure of any ſpecies of merchandiſe that a ſhip will carry when fit for ſea.

To determine the burthen, or, in other words, the tonnage, of a ſhip, it is uſual to multiply the length of the keel into the extreme breadth of the ſhip within-board, taken along the midſhip-beam, and multiply the product by the depth in the *hold* from the plank joining to the *kelſon* upwards, to the main-deck, and divide the laſt product by 94, then will the quotient be the burden required, in tons.

BURTON, (*bredindin*, Fr.) a ſort of ſmall tackle, formed by two blocks or pullies, till the rope becomes three or four fold, and acquires an additional power in proportion.

It is generally employed to tighten the ſhrouds of the top-maſts, but may be otherwiſe uſed to move or draw along any weighty body in the *hold*, or on the *deck*, as anchors, bales of goods, large caſks, &c.

BUSS, (*buche*, Fr. *buſſe*, Germ.) a ſhip of two maſts, uſed by the Engliſh and Dutch in their herring fiſheries. It is generally from fifty to ſeventy tons burthen; being furniſhed with two ſmall ſheds or cabins, one at the prow and the other at the ſtern; the former of which is employed as a kitchen.

BUTT, (*about*, Fr.) the end of any plank in a ſhip's ſide which unites with the end of another, continuing it's length: when a plank is looſened at the end by the ſhip's weakneſs or labouring, ſhe is ſaid to have ſtarted or ſprung a butt.

BUTTOCK, the convexity of a ſhip behind, under the ſtern; it is terminated by the counter above, and by the after part of the bilge below, by the rudder in the middle, and by the quarter on the ſide.

BUTTONS. See the article Bonnet.

C.

CABIN, (*cabane*, Fr.) a room, or the apartment in a ſhip where any of the officers uſually reſide.

There are many of theſe in a large ſhip; the principal of which is deſigned for the captain, or commander. In ſhips of the line, this chamber is furniſhed with an open gallery in the ſhip's ſtern, as alſo a little gallery on each quarter. The apartments where the inferior officers or common ſailors ſleep and meſs, are uſually called births; which ſee.

The bed-places built up for the ſailors at the ſhip's ſide in merchantmen, are alſo called cabins.

CABLE, (*câble*, Fr.) a large, ſtrong rope, of a conſiderable length, uſed to retain a ſhip at anchor in a road, bay, or haven.

Cables are of various ſorts and ſizes. In Europe they are uſually manufactured of hemp; in Africa they are more frequently compoſed of baſs, which is a ſort of long ſtraw or ruſhes; and in Aſia of a peculiar ſort of Indian graſs.

Cables, of what thickneſs ſoever, are generally formed of three ropes twiſted together, which are then called *ſtrands:* each of theſe is compoſed of three ſmaller ſtrands; and thoſe laſt of a certain number of rope yarns. This number is therefore greater or ſmaller in proportion to the ſize of the cable required.

There are ſome cables, however, manufactured of four ſtrands; which are chiefly the production of Italy and Provence.

All ſhips ought to be furniſhed with at leaſt three good cables; the *ſheet* cable, and the two *bowers*; beſt and ſmall.

All cables ought to be one hundred and twenty fathoms in length; for which purpoſe the threads or yarns muſt be one hundred and eighty fathoms; inaſmuch as they are diminiſhed one-third in length by twiſting. Beſides this length, it is neceſſary to ſplice at leaſt two cables together, in order to double the length when a ſhip is obliged to anchor in deep water. For although it is not common to anchor in a greater depth than forty fathoms, yet if there is only one cable, and the ſhip rides in a ſtorm and tempeſtuous ſea, the anchor will of neceſſity ſuſtain the whole weight and violent jerking of the ſhip, in a direction too nearly perpendicular. By this effort it will unavoidably be looſened from it's hold, and dragged by the ſhip, which, thus driven from her ſtation, is in immediate danger of being wrecked on the neareſt rocks or ſhallows; whereas it is evident, that if the cable, by it's great length, were to draw more horizontally on the anchor, it would bear a much greater force. See ANCHOR.

The long cable is not ſo apt to break as the ſhort one; becauſe it will bear a great deal more ſtretching before it comes to the greateſt ſtrain:

it therefore reſembles a ſort of ſpring, which may be very eaſily extended, and afterwards recovers it's firſt ſtate, as ſoon as the force which extended it is removed. Beſides all this, a ſhip will ride much ſmoother with a long cable, and be leſs apt to *pitch*, or plunge deep in the water with her fore-part.

On the contrary, the ſhort cable, being too nearly vertical to the anchor, cannot bear ſuch a ſtrain, becauſe it is charged with a greater effort; and, as it will not bear ſtretching, may break at the firſt violent tug. The ſhip alſo rides with much greater difficulty, labours extremely, and often plunges all her fore-part under water.

By what has been ſaid on this ſubject, we may ſee how very neceſſary it is to furniſh a ſhip with ſufficiency of cables, or what is called ground-tackle; and what an inconſiderate policy it is in merchants to expoſe their veſſels to ſuch evident dangers from the want of them. For we may venture to aſſert, without violation of truth, that many good ſhips have been loſt only on account of a deficiency in this important article.

A cable ought neither to be twiſted too much nor too little; as in the former ſtate it will be extremely ſtiff, and difficult to manage; and in the latter, it will be conſiderably diminiſhed in it's ſtrength.

All cables are to each other as the cubes of their diameters.

The number of threads alſo, of which each cable is compoſed, being always proportioned to it's length and thickneſs, the weight and value of it are determined by this number. Thus a cable of ten inches in circumference ought to conſiſt of four hundred and eighty-five threads; and weigh one thouſand nine hundred and forty pounds: and on this foundation is calculated the following table, very uſeful for all perſons engaged in marine commerce, who equip merchant-ſhips on their own account, or freight them for the account of others.

A table of the number of threads and weight of cables of different circumference.

Circumference in inches.	Threads or rope-yarns.	Weight in pounds.
9	393	1572
10	485	1940
11	598	2392
12	699	2796
13	821	3284
14	952	3808
15	1093	4372
16	1244	4976
17	1404	5616
18	1574	6296
19	1754	7016
20	1943	7772

Stream-CABLE, a hawſer, or rope, ſomething ſmaller than the bowers, and uſed to moor the ſhip in a river or haven, ſheltered from the wind and ſea, &c.

To bit the CABLE. See the articles BITS.

To ſerve the CABLE, is to bind it round with ropes, leather, or other materials, to prevent it from being galled, or fretted in the hawſe by friction.

Heave in the CABLE! the order to draw it into the ſhip by winding about the capſtern or windlaſs.

Pay away the CABLE! ſlacken it, that it may run out of the ſhip. This phraſe is the ſame with *veer away* the cable. See the French term *cable*, and the phraſes following it.

CABLE'*s length*, a meaſure of 120 fathoms, or of the uſual length of the cable.

To CALK, or CAULK, (*calfater*, probably from *calage*, Fr. hemp) to drive a quantity of oakum, or old ropes untwiſted and drawn aſunder, into the ſeams of the planks, or into the intervals where the planks are joined to each other in the ſhip's decks or ſides, in order to prevent the entrance of water. After the oakum is driven very hard into theſe ſeams, it is covered with hot melted pitch or reſin, to keep the water from rotting it.

Amongſt the ancients, the firſt who made uſe of pitch in calking, were the inhabitants of Phæacia, afterwards called Corſica. Wax and reſin appear to have been commonly uſed previous to that period; and the Poles at this time uſe a ſort of unctuous clay for the ſame purpoſe, on their navigable rivers.

CALL, (*ſifflet*, Fr.) a ſort of whiſtle, or pipe, of ſilver or braſs, uſed by the boatſwain and his mates to ſummon the ſailors to their duty, and direct them in the different employments of the ſhip.

As the call can be ſounded to various ſtrains, each of them is appropriated to ſome particular exerciſe; ſuch as hoiſting, heaving, lowering, veering away, belaying, letting-go a tackle, &c. The act of winding this inſtrument is called *piping*, which is as attentively obſerved by ſailors, as the beat of the drum to march, retreat, rally, charge, &c. is obeyed by ſoldiers.

CALM, (*calme*, Fr.) the ſtate of reſt which appears in the air and ſea when there is no wind ſtirring.

That tract of the Atlantic ocean, ſituated between the tropic of Cancer and the latitude of 29° north; or the ſpace that lies between the *trade* and the variable winds, is frequently ſubject to calms of very long duration: and hence it has acquired, amongſt ſeamen, the name of the Calm Latitudes.

A long calm is often more fatal to a ſhip than the ſevereſt tempeſt, becauſe if the ſhip is tight and in good condition, ſhe may ſuſtain the latter without much injury; whereas in a long calm, the proviſion and water may be entirely conſumed, without any opportunity of obtaining a freſh ſupply.

ſupply. The ſurface of the ſea in a continued calm is ſmooth and bright as a looking-glaſs.

Dead-CALM, *(calme tout plat*, Fr.) a flat calm.

CAMBERED-DECK, the deck or flooring of a ſhip is ſaid to be cambered, or to lie cambering, when it is higher in the middle of the ſhip's length, and droops towards the ſtem and ſtern, or the two ends. Alſo when it lies irregular; a circumſtance which renders the ſhip very unfit for war. See the article BROKEN-BACKED.

CAN-BUOY. See BUOY.

CAN-HOOKS, an inſtrument uſed to ſling a caſk by the ends of the ſtaves: it is formed by fixing a broad and flat hook at each end of a ſhort rope, and the tackle, by which the caſk ſo ſlung may be hoiſted or lowered, is hooked to the middle of the rope. See plate II. fig. 8. The can-hooks, commonly uſed aſhore by brewers, &c. are all iron, the middle part being fitted with a chain in the place of a rope.

CANNON, a well known piece of artillery, mounted in battery on the decks of a ſhip, and uſed in all naval engagements.

This engine has already been ſo accurately deſcribed by a variety of authors, that it may ſeem unneceſſary to give a particular deſcription of it here. As it forms, however, ſo important an article in all the military operations of the marine, it cannot, conſiſtently with our plan, be omitted in this place.

CANNON then may be defined a long, conical fire-arm of braſs or iron, concave within, and ſmaller at the muzzle, or face, than at the oppoſite end.

The principal parts of a ſea-cannon, as repreſented in plate VII. fig. 3. are, 1ſt. The breech, A C, and it's button, or caſcabel, A h, called by ſeamen the pomiglion. The breech is generally underſtood to be the ſolid metal from the bottom of the concave cylinder to the caſcabel, which is the extremity of the cannon oppoſite to it's muzzle.

2d. The trunnions, T, which project on each ſide like arms, and ſerve to ſupport the cannon near the middle of it's length: on theſe it may be poiſed, and held almoſt in *equilibrio*. As the metal is thicker at the breech than towards the mouth, the trunnions are placed nearer to that end than the other.

3d. The bore, or caliber, which is comprehended between the dotted lines, and particularly expreſſed in the longitudinal ſection of a thirty-two-pounder, fig. 15. This repreſents the interior or concave cylinder, wherein the powder and ſhot are lodged with which the cannon is charged: the entrance of the bore is called the mouth.

Names of the other parts, including the above plate VII. fig. 3.

A B, the length of the cannon.	H B, the muzzle.
A E, the firſt reinforce.	A o, the caſcabel, or pomiglion.
E F, the ſecond reinforce.	A C, the breech.
F B, the chace.	C D, the vent-field.

F I, the

F I, the chace-girdle.
r s, the baſe-ring and ogee.
t, the vent-aſtragal and fillets.
p q, the firſt reinforce-ring and ogee.
v w, the ſecond reinforce-ring and ogee.
x, the chace-aſtragal and fillets.
z, the muzzle-aſtragal and fillets.
n, the muzzle-mouldings.
m, the ſwelling of the muzzle.
A i, the breech-mouldings.

The uſe of theſe machines is to diſcharge upon the enemy globes or balls of iron, called *ſhot*, which are therefore of various ſizes, in proportion to the caliber of the cannon. The diameter of the ball is always ſomewhat leſs than the bore of the piece, that it may be diſcharged with the greater eaſe, and not damage the piece by rubbing it too forcibly in it's paſſage; and the difference between theſe diameters is called the windage of the cannon.

The length of any cannon is always reckoned from the hind part of the baſe ring, or beginning of the caſcabel, to the extremity of the muzzle. The ſecond reinforce begins at the ſame circle where the firſt terminates; and the chace at the ſame circle where the ſecond reinforce ends.

The firſt reinforce therefore includes the baſe ring; the ogee neareſt thereto; the vent-field; the vent-aſtragal, and firſt reinforce-ring. The ſecond reinforce contains the ogee next to the firſt reinforce-ring and the ſecond reinforce-ring. The chace comprehends the ogee neareſt to the ſecond reinforce-ring; the chace-girdle and aſtragal; and the muzzle and aſtragal. The trunnions are always placed on the ſecond reinforce, ſo as that the breech-part of the cannon may weigh ſomething more than the muzzle-part, to prevent the piece from ſtarting up behind when it is fired.

A variety of experiments, made with great care and accuracy, prove that powder when on fire poſſeſſes at leaſt 4000 * times more ſpace than when in grains. Therefore if we ſuppoſe that the quantity of powder with which a cannon is charged poſſeſſes one-fourth of a cubical foot in grains, it will, when on fire, occupy the ſpace of about 1000 cubical feet. The ſame experiments evince alſo that the powder, when inflamed, is dilated equally round it's center. One grain of powder fired in the center of different concentric circles, round which grains of powder are placed, ſhall therefore ſet fire to all thoſe grains at once.

From this principle it neceſſarily follows, that powder, when fired in a cannon, makes at the ſame inſtant an equal effort on every part of the inſide of the piece, in order to expand itſelf about it's center every way. But as the reſiſtance from the ſides of the piece turns the action of the powder, ſo as to follow the direction of the bore of the cannon, when it preſſes upon the ball, ſo as to force it outwards, it preſſes alſo on the breech of the cannon; and this gives the piece a motion backwards, that is called it's *recoil*, which, as we have already obſerved, is reſtrained by the *breeching* and the convexity of the decks. The recoil in ſome degree

* Mr. Bigot de Morogues ſays from 4000 to 4500, and Mr. Haukſbee 5000.

diminiſhes

diminiſhes the action of the powder upon the ſhot. But this cannot be avoided; for, if the carriages were fixed ſo as not to give way to this motion, the action of the powder, or the effort that cauſes the recoil, would tear them to pieces in a very ſhort time.

All pieces of artillery were formerly diſtinguiſhed into the names of ſakers, culverins, cannon, and demi-cannon; but at preſent their names are derived from the weight of the ball which they diſcharge: thus a piece that diſcharges a ball of twenty-four pounds, is called a twenty-four-pounder; and one that carries a ſhot of thirty-two-pounds, a thirty-two-pounder; and ſo of the reſt.

The metal of cannon is not equally thick in all parts, but is in ſome meaſure proportioned to the force of the powder which it is to reſiſt. At the breech, where the effort is ſtrongeſt, the thickneſs of the metal is equal to the diameter of the correſponding ſhot. At the firſt reinforce, where this begins to ſlacken, the thickneſs is ſomewhat leſs than at the breech: at the ſecond, where the force is ſtill further diminiſhed, the thickneſs is more reduced than at the firſt: and, by the ſame rule, the chace has leſs thickneſs than the ſecond reinforce. The thickneſs of the chace gradually diminiſhes from the trunnions to the mouth of the piece; ſo that if a cannon was without caſcabel, trunnion, and mouldings, it would exactly reſemble the fruſtum of a cone, or a cone deprived of the ſmall end.

In a veſſel of war, cannon are placed on a ſort of wheeled ſledge, called the *carriage*, of which fig. 16. plate VII. is the plan, and fig. 17. the elevation. This carriage is compoſed of two large pieces of plank, called ſides or cheeks, connected together by means of croſs-pieces, which are either bolts, axle-trees, or tranſoms. The two axle-trees are fixed acroſs under the fore and hinder parts of the carriage, being ſupported at their extremities by ſolid wooden wheels called trucks. The tranſom is placed directly over the fore axle-tree, and exactly in the middle of the heighth of the cheeks or ſide-pieces. The heighth of the tranſom is equal to two diameters of the ſhot, and the breadth to one diameter.

Explanation of the iron-work, and different parts of a ſea-carriage, as exhibited in the plan and elevation of a thirty-two-pounder, plate VII. fig. 16. and 17.

a. The cap-ſquares, commonly called clamps in the ſea-ſervice.

b. Eye-bolts, by which one end of the clamp is fixed to the carriage.

c. Joint-bolts, upon which the other end of the clamp is fixed over the trunnions; after which it is fore-locked, to prevent the cannon from ſtarting out of it's carriage when fired.

b g. The cheeks or ſides of the carriage.

d. The tranſom-bolt.

e. The bed-bolt, upon which the bed reſts to ſupport the breech of the cannon. The bed is expreſſed by fig 4.

f. Hind axle-tree bolts.

g. Brecching-

g. Breeching-bolts, with rings, through which the breechings paſs.
h. Loops, or eye-bolts, to which the gun-tackles are hooked.
i. The fore axle-tree, with it's trucks, k.
l. The hind axle-tree, with it's trucks, k.

The wheels are firmly retained upon their axle-trees by means of iron bolts paſſing through the latter without the wheels: theſe bolts are called linch-pins.

The breadth of the wheels is always equal to that of the cheeks; but the heighth of the cheeks and diameter of the trucks muſt conform to the heighth of the gun-ports above the deck. The carriages of the lower tiers ſhould therefore be ſo formed, that when the breech of the cannon lies upon the hind axle-tree, the muzzle of the piece ſhould touch above the port, as expreſſed in fig. 19. which repreſents a cannon ſecured by it's tackles and breechings, to prevent it from ſtraining the ſhip as ſhe rolls in a ſtormy ſea.

Cannon are charged by putting down into the bottom firſt a quantity of powder, one-third or one-half the weight of the ball. This is done with an inſtrument, fig. 7. termed a *ladle*, which is a kind of cylindrical ſpoon, generally made of copper, and fixed to the end of a ſtaff, called it's handle. Upon the powder is put in a wad of rope-yarn, formed like a ball, which is preſſed down upon the powder with the inſtrument expreſſed by fig. 10. called a *rammer*. Upon this wad is put the ball or ſhot; and to ſecure it in it's place another wad is firmly preſſed down upon it, which operation is called *ramming-home* the wad and ſhot. The touch-hole of the piece is then filled with powder, from the upper-part of which a little train is laid that communicates with it. The uſe of this train is to prevent the exploſion of the powder from operating directly upon the inſtrument employed to fire the piece, which in that caſe might be forced out of the hand of the gunner.

In the modern pieces, a little gutter or channel is framed on the upper-part of the breech, to prevent the train from being diſperſed by the wind. This channel reaches from the the touch-hole to the baſe-ring.

The cannon being pointed to it's *object*, or the place which it is intended to ſtrike, the train is fired, and the flame immediately conveyed to the powder in the touch-hole, by which it is further communicated to that in the piece. The powder being kindled immediately expands ſo as to occupy a much greater ſpace than when in grains, and thus dilated it makes an effort on every ſide to force itſelf out. The ball making leſs reſiſtance than the ſides of the piece, upon which the powder preſſes at the ſame time, is driven out by it's whole effort, and acquires that violent motion which is well known to the world.

In plate VII. all the inſtruments neceſſary for charging cannon are exhibited. Beſides theſe already deſcribed, there is the ſponge, fig. 10. which is uſed to clean the piece after firing, and to extinguiſh any ſparks that may remain behind. In the land-ſervice, the handle of the ſponge

is nothing elſe than a long wooden ſtaff; but in ſhips of war this handle, that uſually contains the rammer at it's other end, is a piece of rope well ſtiffened by *ſpun-yarn*, which is for this purpoſe firmly wound about it. By this convenience the rammer becomes flexible, ſo that the piece is charged within the ſhip, as the perſon who loads it may bend and accommodate the length of the rammer to the diſtance between the muzzle and the ſhip's ſide; being at the ſame time ſheltered from the enemy's muſquetry, to which he would be expoſed when uſing a wooden rammer without the ſhip. To ſpunge a piece therefore is to introduce this inſtrument into the bore, and thruſting it home to the furtheſt end thereof, to clean the whole cavity. The figures 8 and 9 repreſent ſpunges of a different kind; one of which is formed of ſheep-ſkin, and the other of the ſtrongeſt briſtles of a hog. See the article EXERCISE.

The *worm*, of which there are alſo different kinds, fig. 6. and 9. is uſed to draw the charge when neceſſary.

The bit, or priming-iron, is a kind of large needle, whoſe lower end is formed into a gimblet, ſerving to clear the inſide of the touch-hole, and render it fit to receive the prime.

The lint-ſtock is a kind of ſtaff about three feet long, to the end of which a match is occaſionally faſtened to fire the piece.

The fluctuating motion of the ſea renders it neceſſary to ſecure and confine the artillery in veſſels of war, by ſeveral ropes and pullies, which are called the *gun-tackles* and *breechings*, without which they could never be managed in a naval engagement. The breeching has been already explained, as employed to reſtrain the recoil. The tackles, fig. 18. are hooked to ring-bolts in the ſides of the carriage, and to other ring-bolts in the ſide of the ſhip, near the edges of the gun-ports, and are uſed to draw the piece out into it's place after it is loaded. Beſides theſe, there is another tackle hooked to the rear or *train* of the carriage, to prevent the cannon from rolling into it's place till it is charged: this is called the train-tackle, and is exhibited in fig. 17.

In ſhips of war, the cannon of the lower-decks are uſually drawn into the ſhip during the courſe of an expedition at ſea, unleſs when they are uſed in battle. They are ſecured by lowering the breech ſo as that the muzzle ſhall bear againſt the upper-edge of the port, after which the two parts of the breeching are firmly braced together by a rope which croſſes them between the front of the carriage and the port; which operation is called *frapping* the breeching. The tackles are then ſecurely faſtened about it with ſeveral turns of the rope extended from the tackle and breeching, over the chace of the cannon, as repreſented in fig. 19.

The ſervice of the artillery, or the method of employing it in a naval action, is explained in the articles ENGAGEMENT and EXERCISE. The manner of pointing, or directing them to different objects; the effects of different quantities of powder upon the cannon ball; and the different lines deſcribed by it's flight, are alſo treated at large in the article RANGE.

We ſhall here ſubjoin a table of the length and weight of different cannon, for the information of thoſe who may be entirely unacquainted therewith; and particularly of our ſea-gunners.

Length and weight of braſs cannon according to the menſuration in 1753.

Pounders.	Length.		Weight.		
	Feet.	Inches.	100lb.	Quarters.	lb.
42	9	6	61	2	10
32	9	5	55	2	7
24	9	5	51	1	12
18	9	0	48	1	0
12	9	0	29	0	0
9	8	5			
6	8	0	19	0	0
3	6	5	11	0	0

Length and weight of iron guns uſed in the ſea-ſervice, according to the menſuration in 1753.

Pounders.	Length.		Weight.		
	Feet.	Inches.	100lb.	Quarters.	lb.
42	10	0	55	1	12
32	9	6	53	3	23
24	9	5	48	0	0
18	9	0	41	1	8
12	9	0	32	3	3
9	8	5	23	2	2
6	7	0	17	1	14
4	6	0	12	2	13
3	4	6	7	1	7

For an account of the particular number of men appointed to manage the different degrees of cannon, and the arrangement or diſtribution of the cannon according to the ſeveral claſſes of ſhips, ſee QUARTERS and RATE.

The following judicious remarks for increaſing the ſtrength of the Britiſh navy, by changing the cannon uſed in ſhips of war into others of equal weight but of greater bore, have been ſelected from the propoſal of the late ingenious Mr. Robins.

The advantage of large cannon over thoſe of a ſmaller bore is ſo generally acknowledged, that a particular diſcuſſion of it might perhaps be ſpared. * * *

" The moſt important advantage of heavy bullets is this, that with the ſame velocity they break holes out in all ſolid bodies in a greater proportion than their weight; that is, for inſtance, a twenty-four pound ſhot will, with the ſame velocity, break out a hole in any wall, rampart, or

or ſolid beam, in which it lodges, above eight times larger than will be made by a three pound ſhot; for it's diameter being double, it will make a ſuperficial fracture above four times as great as the three-pounder, (more of a ſmaller hole being cloſed up by the ſpringing of the ſolid body than of a great one) and it will penetrate to more than twice the depth; by this means the firmeſt walls of maſonry are eaſily cut through their whole ſubſtance by heavy ſhot, which could never be affected by thoſe of a ſmaller caliber; and in ſhips the ſtrongeſt beams and maſts are hereby fractured, which a very great number of ſmall bullets would ſcarcely injure.

" To this laſt advantage of large cannon, which is indeed a capital one, there muſt be that of carrying the weight of their bullet in grape or lead ſhot, and thereby annoying the enemy more effectually than could be done by ten times the number of ſmall pieces.

" Theſe are the principal advantages of large cannon, and hence it is no wonder that thoſe entruſted with the care of the Britiſh navy have always endeavoured to arm all ſhips with the largeſt cannon they could with ſafety bear; and indeed, within theſe laſt hundred years, great improvements have been made on this head, by reducing the weight of many of the ſpecies of cannon, and thereby enabling the ſame ſhips to carry guns of a larger bore: and, very lately, the ſix-pounders in ſome of the ſmaller ſhips have been changed for nine-pounders of a larger fabric than uſual, which hath been juſtly eſteemed a very great addition to the ſtrength of thoſe ſhips.

" The importance then of allotting to all ſhips the largeſt cannon they can with ſafety bear being granted, it remains to ſhew on what foundation a change is propoſed to be made in the fabric of all pieces from the preſent eighteen pounders downwards, ſo that they may be changed for others of the ſame, or leſs weight, but of a larger bore. This propoſition turns on the following conſiderations.—The ſpecies of cannon proper for each ſhip is limited by the weight of the pieces; and when the charge and effort of the bullet are aſſigned, this weight in each ſpecies is, or ought to be, determined by the following circumſtances;

That they ſhall not be in danger of burſting;
That they ſhall not recoil too boiſterouſly;
And that they ſhall not heat too much in frequent firing.

" All this is to be done by a proper quantity of metal properly diſpoſed; and when the pieces are ſecured from theſe accidents, all additional weight of metal is not only uſeleſs but prejudicial.

" Now what dimenſions and weight of metal are more than ſufficient for theſe purpoſes, we may learn from the preſent practice of the navy, in the fabric of the thirty-two pounders, the heavieſt guns in common uſe; theſe are made to weigh (if the author's information be right) from fifty-two to fifty-three hundred weight; that is ſomewhat leſs than an hundred and two-thirds for each pound of bullet.

" From this then the author concludes, that any ſmaller piece, made upon the model of theſe thirty-two pounders, and having their weight proportioned in the ſame manner to the weight of their bullet, will fully anſwer all the purpoſes recited above, and will be of unexceptionable ſervice.

" And he founds his opinions on theſe two principles: firſt, that the ſtrength of iron, or of any other metal, is in proportion to it's ſubſtance; ſo that, for inſtance, where it has one-half the ſubſtance, it has one-half the ſtrength; and this ſuppoſition, he preſumes, will be ſcarcely conteſted. Secondly, that the force of different quantities of powder fired in ſpaces which they reſpectively fill, is not exactly in the proportion of thoſe quantities; but the leſſer quantity has in proportion the leaſt force: that is, for inſtance, the force of one pound of powder, in like circumſtances, is leſs than one-half the force of two pounds. And this principle the author has deduced from many repeated and diverſified trials of his own; and he believes it will be found agreeable to all the obſervations which have been made, or ſhall be made, on this ſubject.

" From theſe two conſiderations, he hopes, it will be granted him, that, if two pieces, a large one and a ſmall one, are made with all their dimenſions in proportion to the diameter of their reſpective bullets, and conſequently their weights in the ſame proportion with the weights of their bullets, then the larger piece, with the ſame proportion of powder, will be more ſtrained, will heat more, and recoil more than the ſmaller.

" Hence then, as we are aſſured, that the preſent thirty-two pounders are of a ſufficient ſtrength and weight for all marine purpoſes, we have the greateſt reaſon to ſuppoſe, that, if all the pieces of an inferior caliber were formed upon the ſame model, meaſuring by the diameter of the bullet, theſe ſmaller pieces would not be defective, either in ſtrength or weight, but would be to the full as ſerviceable on ſhip-board, as the preſent pieces, which are ſo much overloaded with metal.

" The author's ſcheme then, for augmenting the force of the preſent ſea-batteries, is no more than this plain principle, that all ſhip-guns ſhould be caſt upon the model of the thirty-two pounders, meaſuring by the diameter of the reſpective bullet; ſo that for each pound of bullet, there ſhould be allowed one hundred and two-thirds of metal only.

" The advantages of this ſcheme will appear, by the following compariſon of the weight of the preſent pieces with their weight propoſed by this new fabric.

Pieces.	Weight now in hundreds.	Ditto by new fabric.
24	48 to 46	40
18	41 to 39	30
12	34 to 31	20
9	29 to 26	15
6	24 to 18	10

" Hence

" Hence then it appears, that the twenty-four pounders will be eaſed of ſix or eight hundred of uſeleſs metal; and inſtead of an inferior caliber now uſed, much larger ones of the ſame weight may be borne, eſpecially when it is remembered, that this computation exceeds even the preſent proportion of the thirty-two pounders; ſo that from the above projected eighteen-pounders, for inſtance, two or three hundred weight may be ſafely taken.

The changes then propoſed by the author are theſe:

	Pounders.		Hundreds.				Pounders.		Hundreds.
For	6	of	24 and 18	—	new	—	12	of	20
	9	—	29 and 26	—	—	—	18	of	28
	12	—	34 and 31	—	—	—	18	of	28
	18	—	41 and 39	—	—	—	24	of	40

" The nine-pounders lately caſt, being, as the author is informed, ſtill lighter than what is here repreſented, they may perhaps be only transformed into twelve-pounders; but this will be a very great addition of ſtrength, and the twelve-pounders thus borne will be conſiderably lighter than the ſmalleſt nine-pounders now in uſe. The weight of the preſent three-pounders are not remembered exactly by the author; but he doubts not, but they are heavier than the propoſed ſix-pounders, and may therefore be changed for them.

" That many objections will be made to the preſent propoſal is not to be queſtioned; but, as they will equally hold againſt the uſe of the preſent thirty-two pounders, which are known to be guns of unexceptionable ſervice, that alone, it is conceived, will be an anſwer.

" If it be ſuppoſed (as ancient practice is always favourably heard) that the exceſſes in the proportionate weight of the ſmall pieces muſt have been originally founded on ſome approved principle, or otherwiſe they could not have been brought into uſe; it may be anſwered, that a hundred years ſince there were four-pounders made uſe of, which were heavier than ſome of the preſent nine-pounders, and had the ſame preſcription to plead in their behalf.——Perhaps the origin of this exceſs in the ſmaller pieces may be accounted for by ſuppoſing, that when guns are uſed in batteries on ſhore, their length cannot be in proportion to the diameter of their bore; becauſe the parapet being of a conſiderable thickneſs, a ſhort piece would, by it's blaſt, ruin the embraſures; and the ſmaller pieces, being for this reaſon made nearly of the ſame length with the larger, did hence receive their additional weight of metal. But this reaſon holds not at ſea, where there is no other exception to the ſhortneſs of a piece, but the loſs of force, which, in the inſtances here propoſed, is altogether inconſiderable; for the old twelve-pounders, for example, being in length from nine feet to nine feet and a half, the new ones here propoſed will be from ſeven feet to ſeven and a half long. The difference in the force of the bullet, fired from theſe different pieces, is but little;

little; and it will hereafter appear, that in the preſent ſubject much greater differences than theſe are of no conſequence.

" If it ſhould be ſaid, that the new fabric here propoſed muſt have the preſent allowance of powder (which in the ſmaller pieces is half the weight of the ball) diminiſhed, and that it muſt be reduced to the rate of the thirty-two pounders, which is only ſeven-ſixteenths of the weight of the ball; it is anſwered, that if the powder, in all ſhip-cannon whatever, was ſtill further reduced to one-third of the weight of the ball, or even leſs, it would be a conſiderable advantage, not only by the ſaving of ammunition, but by keeping the guns cooler and more quiet, and at the ſame time more effectually injuring the ſhips of the enemy *; for with the preſent allowance of powder the guns are heated, and their tackles and furniture ſtrained, and this only to render the bullet leſs efficacious than it would prove if impelled by a ſmaller charge. Indeed in battering of walls, which are not to be penetrated by a ſingle ſhot from any piece whatever, the velocity of the bullet, how much ſoever augmented, ſtill produces a proportionate effect, by augmenting the depth to which it penetrates: but the ſides of the ſtrongeſt ſhips, and the greater part of her timbers, are of a limited thickneſs, inſufficient to ſtop the generality of cannon bullets, fired at a reaſonable diſtance, even with a leſs charge than is here propoſed. And it is a matter of experiment, that a bullet, which can but juſt paſs through a piece of timber, and loſes almoſt all it's motion thereby, has a much better chance of rending and fracturing it, than if it paſſed through it with a much greater velocity.

" That a much better judgment may be made of the reaſonableneſs of this ſpeculation, the author thinks proper to add (and he believes future experience will not contradict him) that a twelve-pounder, as here propoſed, which is one of the ſmalleſt pieces at preſent under conſideration, when charged with one-third of the weight of the bullet in powder, will penetrate a beam of the beſt ſeaſoned toughest oak, to more than twenty inches depth; and if, inſtead of one ſolid beam, there are a

* " The change propoſed here, of reducing the quantity of powder in all ſhip guns to one-third of the weight of the bullet, has for ſome time paſt been practiſed by the French in a much ſeverer ſervice, where the encreaſing the velocity of the bullet could not at any time diminiſh it's effect; the ſervice I mean is battering in breach. For I learn, that of late years all their breaches, in the different ſieges they have undertaken, have been made with this very charge, that is, their twenty-four-pounders have been loaded with eight pounds of powder, and they have found, that though the penetration of the bullet is leſs with this charge than with a larger one, yet the other conveniencies attending this ſmaller charge, are more than ſufficient to balance that particular.

" And here I muſt obſerve, that there have not been wanting perſons of conſiderable name, who have aſſerted that the velocity of a twenty-four pound bullet was really greater with eight pounds of powder than with any larger quantity, founding their opinion on the ridiculous perſuaſion, that whatever quantity was put in, no more than eight pounds of it took fire; but this ſuppoſition is deſtroyed by their own experiments, and their own reaſonings; and later experiments, made with greater attention, put it beyond all doubt, that to the larger charge (at leaſt as far as twenty pounds of powder) there correſponds a greater velocity.

number

number of ſmall ones, or of planks laid together; then allowing for rending and tearing, frequent in ſuch caſes, he doubts not, but it will often go through near double that thickneſs, and this any where within a hundred yards diſtance: that is, any where within that diſtance, which the moſt experienced officers have recommended for naval engagements. In the ſame diſtance, a bullet from the twelve-pounders now in uſe, charged with half the weight of powder, will penetrate about one-third part deeper: but if the efforts of each piece are compared together at five hundred yards diſtance, the differences of their forces will not be conſiderable. If this be ſo, it will not be aſſerted, I imagine, that the twelve-pounder here propoſed is leſs uſeful, or leſs efficacious, for all naval purpoſes, than the weightier twelve-pounder hitherto made uſe of.

"The author has in this propoſal fixed on the thirty-two pounders, as the ſtandard for the reſt; becauſe experience has long authoriſed them. But from the trials he has made, he is well ſatisfied, a much greater reduction of weight, than is here propoſed, might ſafely take place; and that one-fourth, or even one-fifth of the weight of the bullet in powder, if properly diſpoſed, is abundantly ſufficient for every ſpecies of ſhip-guns *. However, the author is far from deſiring, that his ſpeculations ſhould be relied on in an affair of this nature, where he pretends not to have tried the very matter he propoſes, but founds his opinion on certain general principles and collateral experiments, which he conceives, he may apply to the preſent caſe without error. He would himſelf recommend an experimental examination of this propoſal, as the only one to which credit ought to be given. What he intends by the preſent paper, is to repreſent it as a matter worthy of conſideration, and really ſuch as it appeared to him: if thoſe, to whoſe cenſure he ſubmits it, are of the ſame opinion, there is an obvious method of determining how far his allegations are concluſive; and that is by directing one of theſe pieces to be caſt, a twelve-pounder for inſtance, and letting it be proved with the ſame proportion of powder allotted for the proof of the thirty-two pounders: then if this piece be fired a number of times ſucceſſively on a carriage, and it's recoil and degree of heat be attended to, and if the penetration of it's bullet into a thick butt of oak-beams or plank be likewiſe examined, a judgment may thence be formed, of what may be expected from the piece in real ſervice; and the reſult of theſe trials will be the moſt inconteſtable confutation or confirmation or this propoſal."

CANNONADE, as a term of the marine, may be defined the application of artillery to the purpoſes of naval war, or the direction of it's efforts againſt ſome diſtant object intended to be ſeized or deſtroyed, as a ſhip, battery, or fortreſs.

* It is neceſſary to obſerve in this place, that Mr. Muller, whoſe opinion herein has been confirmed by various experiments, has, with little variation, adopted the ſentiments of the above propoſal, and ſtrongly recommended them as a ſcheme of public utility.

Cannonading is therefore uſed in a veſſel of war to take, ſink, or burn the ſhips of an enemy, or to drive them from their defences aſhore, and to batter and ruin their fortifications.

Since a large ſhip of war may be conſidered as a combination of floating batteries, it is evident that the efforts of her artillery muſt in general be greatly ſuperior to thoſe of a fortreſs on the ſea-coaſt: I ſay in general, becauſe on ſome particular occaſions her ſituation may be extremely dangerous, and her cannonading ineffectual. Her ſuperiority conſiſts in ſeveral circumſtances, as, the power of bringing her different batteries to converge to one point; of ſhifting the line of her attack ſo as to do the greateſt poſſible execution againſt the enemy; or to lie where ſhe will be the leaſt expoſed to his ſhot; and chiefly becauſe, by employing a much greater number of cannon againſt a fort than it can poſſibly return, the impreſſion of her artillery againſt ſtone-walls ſoon becomes deciſive and irreſiſtible. Beſides theſe advantages in the attack, ſhe is alſo greatly ſuperior in point of defence: becauſe the cannon ſhot, paſſing with rapidity through her ſides, ſeldom do any execution out of the line of their flight, or occaſion much miſchief by their ſplinters: whereas they very ſoon ſhatter and deſtroy the faces of a parapet, and produce incredible havoc amongſt the men, by the fragments of the ſtones, &c. A ſhip may alſo retreat when ſhe finds it too dangerous to remain longer expoſed to the enemy's fire, or when her own fire cannot produce the deſired effect. Finally, the fluctuating ſituation of a ſhip, and of the element on which ſhe reſts, renders the efforts of ſhells very uncertain, and altogether deſtroys the effect of the *ricochet*, or rolling and bounding ſhot, whoſe execution is ſo pernicious and deſtructive in a fortreſs or land-engagement; both of which, however, a ſhip may apply with great ſucceſs. See RANGE.

The chief inconveniency to which a ſhip is expoſed, on the contrary, is, that the low-laid cannon in a fort near the brink of the ſea, may ſtrike her repeatedly, on or under the ſurface of the water, ſo as to ſink her before her cannonade can have any conſiderable efficacy.

CANOE, a ſort of Indian boat or veſſel, formed of the trunk of a tree hollowed, and ſometimes of ſeveral pieces of the bark faſtened together.

Canoes are of various ſizes, according to the uſes for which they may be deſigned, or the countries wherein they are formed. The largeſt are made of the cotton tree, ſome of which will carry between twenty and thirty hogſheads of ſugar or molaſſes. Some are made to carry ſail, and for this purpoſe are ſteeped in water till they become pliant, after which their ſides are extended, and ſtrong beams placed between them, on which a deck is afterwards laid that ſerves to ſupport their ſides. The other ſorts very rarely carry ſail, unleſs when going before the wind: their ſails are made of a ſort of ſilk graſs or ruſhes. They are commonly rowed with paddles, which are pieces of light wood ſome what reſembling a corn-ſhovel; and inſtead of rowing with it horizontally, like an oar, they manage it perpendicularly. The ſmall canoes are

are very narrow, having only room for one perſon in breadth, and ſeven or eight lengthways. The rowers, who are generally negroes or American ſavages, are very expert in managing their paddles uniformly, and in balancing the canoes properly with their bodies, which would be difficult for a ſtranger to do, how well accuſtomed ſoever to the conducting of European boats, becauſe the canoes are extremely light, and liable to be overturned.

The American Indians, when they are under the neceſſity of landing to avoid a water-fall, or of croſſing the land from one river to another, carry their canoes on their heads; till they arrive at a place where they can lanch them again.

The following curious account of the canoes of the Eſquimaux Indians, in Labrador, has been lately tranſmitted to the author, which he apprehends will not be diſpleaſing to his readers.

The Eſquimaux canoe has a light wooden frame, and the ſhell, inſtead of plank, is made with ſeal-ſkins ſewed together, which are not only extended round the bottom and ſides, but likewiſe over the top; forming a complete deck, and having only one opening, conveniently framed and ſituated to admit the Indian into his ſeat. A flat hoop is fitted to this hole, riſing about four inches, to which the ſurrounding ſkin is ſewed. The Indian's ſeal-ſkin jacket, being of a proper length, he can occaſionally bind the ſkirt of it round the outſide of this hoop; by which means he keeps the canoe free from water, and is enabled to purſue his game far from land or in ſtormy ſeas. His paddle is about ten feet long, light, and flat at each end, with which he both rows and ſteers with great velocity and exactneſs. Mr. Crantz, in his Hiſtory of Greenland, informs us, that the young men in their exerciſe are taught to overſet their canoes, and when the bottom is upward, to recover, by the dexterous management of their paddle, their former upright poſition, the men riſing again either on the ſide by which they went down, or on the contrary, as they pleaſe. The conſtruction of this extraordinary little veſſel, ſo admirably well adapted to the purpoſes of it's owner, does the greateſt credit to the ingenuity of this ſavage people. Though natives of the extenſive country of Labrador, they inhabit only the ſea-coaſts, particularly the iſlands, the interior parts being no leſs barren, and poſſeſſed by other wandering tribes, their perpetual enemies and ſuperiors at land; ſo that they are reduced to almoſt an entire dependence upon the ſea for the common neceſſaries of life. Seals-fleſh and oil are amongſt the chief articles of their food; and with the ſkins they make tents, canoes, and apparel. Thoſe iſlands on which the ſea-fowl breed, they viſit for their eggs and young; and kill birds in the water with their darts. We are ſurpriſed, that provided thus, they ſhould do ſo much execution amongſt theſe creatures; but when we behold a party of ſavages, each in his canoe, with only his harpoon and his lance, purſue, attack, and kill the largeſt whale, how juſtly are we filled with admiration. The whales fleſh and

oil they eat; and the tough ſubſtance of the gills, commonly called whale-bone, they apply very ingeniouſly to a great variety of uſes; trafficking with the overplus for ſuch European goods as they want. In their language, the canoe is called *kaiak*, or man's-boat, to diſtinguiſh it from *umiak*, the woman's-boat. The latter is a large boat, managed by the women for tranſporting their families and poſſeſſions, when they ſhift their encampment from place to place, as moſt convenient for the particular hunting of the ſeaſon. A kind of wolf-dog, natural to that country, is the only animal they breed for food. The ſame canoes, language, cuſtoms, and way of life, being common to the Greenlanders with the Eſquimaux, it is evident they have been originally one people.

There is a Greenland canoe in the Repoſitory of the Royal Society, covered with ſeal-ſkins, and exactly conformable to the above deſcription.

CANTING, as a ſea-phraſe, denotes the act of turning any thing about.

CANT-TIMBERS, in ſhip-building, thoſe timbers which are ſituated at the two ends of a ſhip. They derive their name from being *canted*, or raiſed obliquely from the keel; in contradiſtinction to thoſe whoſe planes are perpendicular to it. The upper-ends of thoſe on the *bow*, or fore-part of the ſhip, are inclined to the ſtem; as thoſe in the *after*, or hind-part, incline to the ſtern-poſt above. See the articles TIMBER and *Naval* ARCHITECTURE.

The principal of theſe laſt is the faſhion-piece, which forms the outline of the counter, terminating it on the ſides.

CAP, (*chouquet*, Fr.) a ſtrong, thick block of wood, uſed to confine two maſts together, when the one is erected at the head of the other, in order to lengthen it. It is for this purpoſe furniſhed with two holes perpendicular to it's length and breadth, and parallel to it's thickneſs; one of theſe is ſquare, and the other round; the former being ſolidly fixed upon the upper-end of the lower-maſt, whilſt the latter receives the maſt employed to lengthen it, and ſecures it in this poſition.

The principal caps of a ſhip are thoſe of the lower-maſts, which are fitted with a ſtrong eye-bolt on each ſide, wherein to hook the block by which the top-maſt is drawn up through the cap; the proceſs of which is explained in the article MAST.

The breadth of all caps is equal to twice the diameter of the top-maſt, and the length to twice the breadth. The thickneſs of the main and fore-caps is half the diameter of their breadths; the mizen-cap three-ſevenths, and the top-maſt-caps two-fifths of their reſpective breadths.

In the ſame manner as the top-maſt ſlides up through the cap of the lower-maſt, the *top-gallant-maſt* ſlides up through the cap of the top-maſt. The cap is repreſented by fig. 9. plate II.

CAPE, a promontory, or head-land, which projects into the ſea further than the reſt of the coaſt.

CAPPANUS, a name given by ſome authors to the worm which adheres to, and gnaws the bottom of a ſhip.

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J. Mynde

The cappanus is extremely pernicious to ſhips, particularly in the Eaſt and Weſt Indies: to prevent this, ſeveral ſhips have lately been ſheathed with copper: the firſt trial of which was made on his Majeſty's frigate Alarm.

CAP-SQUARE. See the article CANNON.

CAPSTERN, or CAPSTAN, (*cabeſtan*, Fr.) a ſtrong maſſy column of timber, formed like a truncated cone, and having it's upper extremity pierced with a number of holes to receive the bars or levers. It is let down perpendicularly through the decks of a ſhip, and is fixed in ſuch manner, that the men, by turning it horizontally with their bars, may perform any work which requires an extraordinary effort.

A capſtern is compoſed of ſeveral parts, (ſee plate II. fig. 11.) where A is the barrel, b the whelps, c the drum-head, and d the ſpindle.

The whelps riſe out from the main body of the capſtern like buttreſſes, to enlarge the ſweep; ſo that a greater portion of the cable, or whatever rope encircles the barrel, may be wound about it at one turn, without adding much to the weight of the capſtern. The whelps reach downwards from the lower part of the drum-head to the deck.

Plate II. fig. 11 and 12. The drum-head is a broad cylindrical piece of wood, reſembling a mill-ſtone, and fixed immediately above the barrel and whelps. On the outſide of this piece are cut a number of ſquare holes parallel to the deck, to receive the bars.

The pivot, or ſpindle, d, which is ſhod with iron, is the axis or foot upon which the capſtern reſts, and turns round in the ſaucer, which is a ſort of iron ſocket let into a wooden ſtock or ſtandard, called the ſtep, reſting upon, and bolted to the beams.

Beſides the different parts of the capſtern above explained, it is furniſhed with ſeveral appurtenances, as the *bars*, the *pins*, the *pawls*, the *ſwifter*, and the *ſaucer*, already deſcribed.

The bars are long pieces of wood, or arms, thruſt into a number of ſquare holes in the drum-head all round, in which they are as the radii of a circle, or the ſpokes to the nave of a wheel. They are uſed to heave the capſtern round, which is done by the men ſetting their breaſts againſt them and walking about, like the machinery of a horſe-mill, till the operation is finiſhed.

The pins, e, are little bolts of iron thruſt perpendicularly through the holes of the drum-head, and through a correſpondent hole in the end of the bar, made to receive the pins when the bars are fixed. They are uſed to confine the bars, and prevent them from working out as the men heave, or when the ſhip labours. Every pin is faſtened to the drum-head with a ſmall iron chain; and, that the bars may exactly fit their reſpective holes, they are all numbered.

The pawls, f, fig. 10. are ſituated on each ſide of the capſtern, being two ſhort bars of iron, bolted at one end through the deck to the beams cloſe to the lower part of the whelps; the other end, which occaſionally turns round on the deck, being placed in the intervals of the whelps, as the capſtern turns, prevents it from recoiling or turning back by any

ſudden jerk of the cable as the ſhip riſes on the ſea, which might greatly endanger the men who heave. There are alſo hanging pawls g, g, fig. 12. uſed for the ſame purpoſes, reaching from the deck above to the drum-head immediately beneath it

The *ſwifter* is a rope paſſed horizontally through holes in the outer ends of the bars, and drawn very tight: the intent of this is to keep the men ſteady as they walk round, when the ſhip rolls, and to give room for a greater number to aſſiſt by pulling upon the ſwifter itſelf.

The moſt frequent uſe of the capſtern is to heave in the cable, and thereby remove the ſhip, or draw up the anchor. It is alſo uſed to wind up any weighty body, as the maſts, artillery, &c. In merchant-ſhips it is likewiſe frequently employed to diſcharge or take in the cargo, particularly when conſiſting of weighty materials that require a great exertion of mechanical powers to be removed.

There are commonly two capſterns in a ſhip of war, the *main* and the *gear* capſtern; the former of which has two drum-heads, and may be called a double one. This is repreſented by fig. 12. of plate II. the latter is exhibited in fig. 11.

Formerly the bars of the capſtern went intirely through the head of it, and conſequently were more than twice the length of the preſent ones; the holes were therefore formed at different heighths, as repreſented in fig. 10. plate II. But this machine had ſeveral inconveniences, ſuch as the perſons who heaved at the higher bars incommoding thoſe at the lower ones; the bars being lifted or lowered by the perſons who heaved at their oppoſite ends; ſome of the bars being too high, and others too low, &c. It has therefore been long intirely diſuſed in the navy. Some of theſe ſort of capſterns, however, are ſtill retained in merchant-ſhips, and are uſually denominated crabs. The ſituation of the bars in a crab, as ready for heaving, is repreſented in fig. 13. plate II.

To rig the CAPSTERN, (*garnir*, Fr.) is to fix the bars in their reſpective holes, and thruſt in the pins in order to confine them.

Surge the CAPSTERN, (*choquer*, Fr.) is the order to ſlacken the rope heaved round upon it, of which there are generally two turns and a half about the barrel at once, and ſometimes three turns.

To heave the CAPSTERN, (*virer au cabeſtan*, Fr.) is to go round with it heaving on the bars, and drawing in any rope of which the purchaſe is created.

To come up the CAPSTERN, is to let go the rope upon which they had been heaving. See the French term CABESTAN, and the phraſes annexed thereto.

To pawl the CAPSTERN, is to fix the pawls to prevent it from recoiling during any pauſe of heaving.

CAPTAIN *of a ſhip of war*, (*capitaine du haut bord*, Fr.) the officer who commands a ſhip of the line of battle, or a frigate carrying twenty or more cannon. The charge of a captain in his Majeſty's navy is very comprehenſive, inaſmuch as he is not only anſwerable for any bad conduct in the

the military government, navigation, and equipment of the ſhip he commands; but alſo for any neglect of duty, or ill management in his inferior officers, whoſe ſeveral charges he is appointed to ſuperintend and regulate.

On his firſt receiving information of the condition and quality of the ſhip he is appointed to command, he muſt attend her conſtantly, and haſten the neceſſary preparations to fit her for ſea. So ſtrict indeed are the injunctions laid on him by the lord high admiral, or commiſſioners of the admiralty, that he is forbid to lie out of his ſhip, from his arrival on board, till the day of his diſcharge, unleſs by particular leave from the admiralty, or his commander in chief.

He is enjoined to ſhew a laudable example of honour and virtue to the officers and men, and to diſcountenance all diſſolute, immoral, and diſorderly practices, and ſuch as are contrary to the rules of diſcipline and ſubordination, as well as to correct thoſe who are guilty of ſuch offences, as are puniſhable according to the uſage of the ſea.

He is ordered particularly to ſurvey all the military ſtores which are ſent on board, and to return whatſoever is deemed unfit for ſervice. His diligence and application are required to procure his complement of men; obſerving carefully to enter only ſuch as are fit for the neceſſary duty, that the government may not be put to improper expence. When his ſhip is fully manned, he is expected to keep the eſtabliſhed number of men complete, and ſuperintend the muſter himſelf, if there is no clerk of the check at the port.

When his ſhip is employed on a cruiſing ſtation, he is expected to keep the ſea the whole length of time previouſly appointed; but if he is compelled by ſome unexpected accident to return to port ſooner than the limited time, he ought to be very cautious in the choice of a good ſituation for anchoring, ordering the maſter, or other careful officers, to ſound, and diſcover the depths of water, and dangers of the coaſt.

Previous to any poſſibility of engagement with an enemy, he is to quarter the officers and men to the neceſſary ſtations according to their office or abilities, and to exerciſe them in the management of the artillery, that they may be more expert in the time of battle. See the articles EXERCISE and QUARTERS.

His ſtation in an engagement is on the quarter-deck; at which time he is expected to take all opportunities of annoying his enemy, and improving every advantage over him; to exhibit an example of courage and fortitude to his officers and crew; and to place his ſhip oppoſite to his adverſary in ſuch a poſition as that every cannon ſhall do effectual execution. See ENGAGEMENT.

At the time of his arrival in port after his return from abroad, he is to aſſemble his officers, and draw up a detail of the obſervations that have been made during the voyage; of the qualities of the ſhip, as to her trim, ballaſt, ſtowage, and manner of ſailing, for the information and direction of thoſe who may ſucceed in command: and this account

is

is to be ſigned by himſelf and officers, and to be returned to the reſident commiſſioner of the navy at the port where the ſhip is diſcharged.

CAREENING, *(faire abattre, cariner*, Fr.) the operation of heaving the ſhip down on one ſide, by the application of a ſtrong purchaſe to her maſts, which are properly ſupported for the occaſion, to prevent them from breaking with ſo great a ſtrain.

Careening is uſed to heave one of the ſhip's ſides ſo low in the water, as that her bottom, being elevated above it's ſurface on the other ſide, (See plate I. fig. 5.) may be cleanſed from any filth, which adheres to it, by BREAMING; which ſee.

When a ſhip is laid on a careen, every thing is taken out of her: ſhe is alſo ſaid to careen when inclining to one ſide at ſea, as preſſed with a weight of ſail.

CARGO, *(chargement*, Fr.) the whole lading, or quantity of whatever ſpecies of merchandiſe a ſhip is freighted with, in order to proceed from port to port.

CARLINGS, *(entremiſes*, Fr.) ſhort pieces of timber ranging fore and aft, from one of the deck beams to another, into which their ends are ſcored: they are uſed to ſuſtain and fortify the ſmaller beams of the ſhip, and are exhibited in the DECK, plate III.

CARPENTER *of a ſhip*, *(charpentier*, Fr.) an officer appointed to examine and keep in order the frame of the ſhip, together with her maſts, yards, boats, and all other wooden machinery, and ſtores committed to him by indenture from the ſurveyor of the dock-yard.

It is his duty in particular to keep the ſhip *tight*; for which purpoſe he ought frequently to review the decks and ſides, and to caulk them when it is found neceſſary. In the time of battle he is to examine up and down, with all poſſible attention, in the lower apartments of the ſhip, to ſtop any holes that may have been made in the ſides by ſhot, with wooden plugs provided, of ſeveral ſizes, for that purpoſe.

CARTEL, *(cartel*, Fr.) a ſhip commiſſioned in time of war to exchange the priſoners of any two hoſtile powers; alſo to carry any particular requeſt or propoſal from one to another: for this reaſon the officer who commands her is particularly ordered to carry no cargo, ammunition, or implements of war, except a ſingle gun for the purpoſe of firing ſignals.

CARTRIDGE, *(cartouch*, Fr.) a cartridge for a great gun, or other fire-arm.

CARTRIDGE-BOX, *(bandouliere*, Fr.) for muſquetry.

CAST AWAY, the ſtate of a ſhip which is loſt or wrecked on a lee-ſhore, bank, or ſhallow.

CASTING, *(abattre*, Fr.) in navigation, the motion of falling off, ſo as to bring the direction of the wind on either ſide of the ſhip after it had blown for ſome time right a-head.

This term is particularly applied to a ſhip when her anchor firſt looſens from the ground, when ſhe is about to depart from any place where ſhe had anchored; and as ſhe had probably reſted at anchor with her head to windward, it is plain ſhe muſt turn it off, ſo as to *fill* the ſails before ſhe can advance in her courſe, which operation is called caſting.

Hence

Hence ſhe is ſaid to caſt the right way, or the wrong way. See TRIM.

CAT, (*chatte*, Fr.) a ſhip employed in the coal trade, formed from the Norwegian model. It is diſtinguiſhed by a narrow ſtern, projecting *quarters*, a deep *waiſt*, and by having no ornamental figure on the prow.

Theſe veſſels are generally built remarkably ſtrong, and carry from four to ſix hundred tons; or, in the language of their own mariners, from twenty to thirty *keels* of coals.

CAT, (*capon*, Fr.) is alſo a ſort of ſtrong tackle, or complication of pullies, to hook and draw the anchor perpendicularly up to the *cat-head*. The uſe of this machine is repreſented in plate II. fig. 14.

CATAMARAN, (*catimaron*, Fr.) a ſort of raft or float, formed by the faſtening a number of poles to each other ſideways, and laying boards, planks, &c. on the top, ſo as to convey goods or paſſengers to ſome diſtant place by water when no boat can be procured. This, however, can only be peformed when the ſurface of the water is not much agitated.

CAT-HARPINS, a purchaſe of ropes employed to brace in the *ſhrouds* of the lower maſts behind their yards, for the double purpoſe of making the ſhrouds more tight, and of affording room to draw the yards in more obliquely, to *trim* the ſails for a ſide-wind, when they are ſaid to be cloſe-hauled.

CAT-HEADS, (*beſſoirs*, Fr.) two ſtrong ſhort beams of timber, which project almoſt horizontally over the ſhip's bows, on each ſide of the bow-ſprit, being like two radii which extend from a center taken in the direction of the bow-ſprit.

That part of the cat-head which reſts upon the fore-caſtle is ſecurely bolted to the beams: the other part projects like a crane, as above deſcribed, and carries in it's extremity two or three ſmall wheels, or *ſheaves*, of braſs, or ſtrong wood, about which a rope called the *cat-fall* paſſes, and communicates with the cat-block, which alſo contains three ſheaves. The machine formed by this combination of pullies is called the *cat*, which ſerves to pull the anchor up to the cat-head without tearing the ſhip's ſide with it's flukes.

The cat-head alſo ſerves to ſuſpend the anchor clear of the bow, when it is neceſſary to let it go: it is ſupported by a ſort of knee, which is generally ornamented with ſculpture.

The cat-block is fitted with a large and ſtrong hook, which catches the ring of the anchor when it is to be drawn up. See a repreſentation of this article, plate II. fig. 14.

CATS-PAW, (*echars*, Fr.) a light air of wind perceived at a diſtance in a calm, by the impreſſion made on the ſurface of the ſea, which it ſweeps very lightly, and then decays.

CAULKING. See the article CALKING.

CEILING, the inſide planks of a ſhip. See FOOT-WALEING.

CENTER *of a* FLEET, or SQUADRON, (*corps de bataille*, Fr.) the middle of the line, which is always the ſtation of the admiral or commander in chief, and ought to be the ſtrongeſt proportionably, as it reaches from the van and rear. See LINE OF BATTLE.

To CHAFE, *(racquer*, Fr.) is to rub or fret the ſurface of a cable, maſt, or yard, whilſt the ſhip is agitated by the motion of the ſea, or otherwiſe.

CHAIN-PUMP. See the article PUMP.

CHAINS, *(cadenes*, Fr.) ſtrong links or plates of iron, the lower ends of which are bolted through the ſhip's ſide to the timbers.

They are placed at ſhort diſtances from each other on the ſhip's out-ſide, as being uſed to contain the blocks called *dead-eyes*, by which the *ſhrouds* of the maſts are extended. The diſpoſition of the chains, and that of their *channels*, is repreſented by the letters I, I, in the plane of ELEVATION, plate I. as alſo by fig. 16. plate II.

CHAIN-SHOT, a particular kind of ſhot formed by faſtening two cannon-balls together with a ſhort chain, and deſigned to mangle and ruin a ſhip's ſails and rigging, or to deſtroy her maſts and yards. See SHOT.

Top CHAIN, a chain to ſling the ſail-yards in the time of battle, in order to prevent them from falling down when the ropes, by which they are hung, happen to be ſhot away, or rendered incapable of ſervice.

CHAIN-WALE. See CHANNEL.

CHANNEL, *(manche*, Fr.) in hydrography, the deepeſt part of a river, harbour, or ſtreight, which is moſt convenient for the track of ſhipping.

CHANNELS, or CHAIN-WALES *of a ſhip*, *(porte-boſſoirs*, Fr.) broad and thick planks projecting horizontally from the ſhip's out-ſide, a-breaſt of, and ſomewhat behind, the maſts. See plate II. fig. 16.

They are formed to extend the ſhrouds from each other, and from the axis or middle line of the ſhip, ſo as to give a greater ſecurity and ſupport to the maſts, as well as to prevent the ſhrouds from damaging the gun-wale, or being hurt by rubbing againſt it. See alſo SHROUD.

Every maſt has it's chain-wales, which are either built above or below the ſecond deck-ports in a ſhip of the line: they are ſtrongly connected to the ſide by knees, bolts, and ſtandards, beſides being confined thereto by the chains, whoſe upper ends paſs through notches on the outer edge of the chain-wales, ſo as to unite with the ſhrouds above.

CHAPELING *a ſhip*, *(faire chapelle*, Fr.) the act of turning her round in a light breeze of wind when ſhe is cloſe-hauled, ſo as that ſhe will lie the ſame way ſhe did before. This is commonly occaſioned by the negligence of the ſteerſman, or by a ſudden change of the wind.

CHARGE *of a cannon*. See the article CANNON.

CHART, *(charta*, Lat.) a marine map or draught, upon which are repreſented the coaſts, iſles, banks, rocks, and dangers of the ſea, together with the rhombs of the wind, and the entrance of bays and rivers, whereby to ſhape and regulate the various courſes of a ſhip in her voyage.

CHARTER-PARTY, *(charte-partie*, Fr.) a deed or writing made between merchants and ſea-faring men, concerning their merchandiſe and maritime affairs.

A charter-party of affreightment ſettles the agreement in relation to the freight and cargo of a ſhip between the merchant and maſter, or commander of the veſſel. It binds the maſter to deliver the cargo in good condition at the place where his ſhip is to be diſcharged, &c.

In thoſe charter-parties, if the dangers of the ſea are excepted, it has been adjudged that ſuch exception extends as well to any danger upon ſea from ſhips of war or pirates, as to common hazards by ſhipwreck, tempeſts, &c.

CHACE, a veſſel purſued by ſome other, which ſhe apprehends or knows to be an enemy.

Bow CHACE, a cannon ſituated in the fore-part of a ſhip to fire upon any object a-head of her.

Stern CHACE, the cannons which are placed in the after-part of a ſhip's gun-room, pointing a-ſtern, and intended to ſtrike any ſhip which chaſes her, or other object in her rear.

CHASING, the act of purſuing a ſhip or fleet, ſuppoſed or known to be hoſtile. The admiral diſplayed the ſignal for a general chace, i. e. gave the alarm to the whole fleet or ſquadron to purſue ſome other fleet in ſight.

CHEARLY, a phraſe which uſually implies heartily, chearfully, or quickly, as row chearly in the boats! lower away chearly! i. e. row heartily, lower ſpeedily, &c.

CHEEKS *of the maſt*, *(jottereaux.* Fr.) the faces or projecting parts on each ſide of the maſts, uſed to ſuſtain the frame of the top, together with the top-maſt, which reſts immediately upon them.

CHES-TREES, *(taquets d'amure*, Fr.) two pieces of wood bolted perpendicularly, one on the ſtarboard, and the other on the larboard ſide of the ſhip. They are uſed to confine the *clue*, or lower corners of the main-ſail; for which purpoſe there is a hole in the upper part through which the rope paſſes that uſually extends the clue of the ſail to windward. See the article TACK.

The ches-trees are commonly placed as far before the main-maſt as the length of the main-beam.

Clerk of the CHECK, an officer in the royal dock-yards, who keeps a muſter or regiſter of all the men employed aboard his Majeſty's ſhips and veſſels, and alſo of all the artificers and others in the ſervice of the navy at the port where he is ſettled.

To CHINSE, is to thruſt oakum into a ſeam or chink with the point of a knife or chiſſel. This is chiefly uſed as a temporary expedient when caulking cannot be ſafely or conveniently performed.

CHOCK, a ſort of wedge uſed to confine a caſk or other weighty body, in a certain place, and to prevent it from fetching way when the ſhip is in motion, &c.

CLAMPS, *(bauquieres*, Fr.) thick planks in a ſhip's ſide, uſed to ſuſtain the ends of the beams. See the article MIDSHIP-FRAME.

The clamps extend from the ſtem to the faſhion-pieces of the ſtern, including the whole interior range of the ſide. They are placed cloſe under each deck ſo as to be ſecurely fayed to all the timbers, to which they are faſtened by nails driven through the clamp, and penetrating two-thirds of the thickneſs of the timbers.

The clamps of the lower and ſecond decks ought to be equal in thickneſs to half the correſponding timbers in that part, and as broad as can be procured. In their diſpoſition it is eſſentially neceſſary to avoid their being wounded by the ports, as the ſtrength and firmneſs of a ſhip greatly depend on the ſubſtance and ſolidity of thoſe pieces which lie horizontally in her frame.

CLAMPS are alſo ſmall crooked plates of iron, fore-locked upon the trunnions of the cannon, to keep them ſteady in their carriages at ſea. Theſe, however, are more properly termed cap-ſquares. See CANNON.

Clamps of the latter ſort are likewiſe frequently uſed to faſten the maſts or bowſprits of ſmall veſſels or boats.

CLAWING, or CLAWING-OFF, *(chicaner*, Fr.) in navigation, the act of *beating*, or turning, to windward from a lee-ſhore, ſo as to acquire a ſufficient diſtance from it, to eſcape the dangers of ſhipwreck, which often attend ſo hazardous a ſituation.

CLEAR, as a naval term, is variouſly applied to the weather, the ſea-coaſts, cordage, navigation, &c. The weather is ſaid to be clear *(fin*, Fr.) when it is fair and open, as oppoſed to cloudy or foggy.

The ſea-coaſt is called clear *(ſaine*, Fr.) when the navigation is not interrupted, or rendered dangerous by rocks, ſands, or breakers, &c.

It is expreſſed of cordage, cables, &c. when they are unembarraſſed or diſentangled ſo as to be ready for immediate ſervice. It is uſually oppoſed to *foul*, in all thoſe ſenſes.

CLEATS, *(taquets*, Fr.) pieces of wood of different ſhapes, uſed occaſionally to faſten ropes upon in a ſhip: ſome of them have one, and ſome two arms, fig. 17. *a*, plate II. others are hollowed in the middle, and have no arms at all, fig. 17. *b*: theſe are nailed to the deck or ſides to faſten any thing to.

CLINCH, that part of a cable, or other rope, which is faſtened to the ring of the anchor.

CLINCHER-WORK, *(bordée à quoin*, Fr.) the diſpoſition of the planks in the ſide of any boat or veſſel, when the lower edge of every plank overlays the next under it, like the ſlates on the top of a houſe.

CLOSE-HAULED, *(au plus pres*, Fr.) in navigation, the general arrangement, or trim, of a ſhip's ſails, when ſhe endeavours to make a progreſs in the neareſt direction poſſible towards that point of the compaſs from which the wind bloweth.

In this manner of ſailing the *keel* commonly makes an angle of ſix points with the line of the wind; but ſloops, and ſome other ſmall veſſels, are ſaid to ſail almoſt a point nearer. All veſſels, however, are ſuppoſed to make nearly a point of *lee-way*, when cloſe-hauled, even when they have the advantage of a good ſailing-breeze and ſmooth water. The angle of lee-way, however, enlarges in proportion to the increaſe of the wind and ſea.

In this diſpoſition of the ſails, they are all extended ſideways on the ſhip, ſo that the wind, as it croſſes the ſhip obliquely towards the ſtern from forwards, may fill their cavities. But as the current of wind alſo enters the cavities of the ſails, in an oblique direction, the effort of it, to make

the ſhip advance, is conſiderably diminiſhed: ſhe will, therefore, make the leaſt progreſs when ſailing in this manner.

The ſhip is ſaid to be cloſe-hauled, becauſe at this time her *tacks*, or lower corners of the principal ſails, are drawn cloſe down to her ſide to windward; the ſheets hauled cloſe aft; and all the bow-lines drawn to their greateſt extenſion, in order to keep the ſails ſteady.

CLOSE-QUARTERS, certain ſtrong barriers of wood ſtretching acroſs a merchant-ſhip in ſeveral places. They are uſed as a place of retreat when a ſhip is boarded by her adverſary, and are therefore fitted with ſeveral ſmall loop-holes, through which to fire the ſmall arms, whereby the ſhip's crew may defend themſelves and annoy the enemy. They are likewiſe furniſhed with ſeveral ſmall caiſſons, called powder-cheſts, which are fixed upon the deck, and filled with powder, old nails, &c. and may be fired at any time from the cloſe-quarters, upon the boarders.

We have known an Engliſh merchant-ſhip, of ſixteen guns, and properly fitted with cloſe-quarters, defeat the united efforts of three French privateers who boarded her in the late war, after having engaged at ſome diſtance nearly a day and a half with very few intervals of reſt. Two of the cruiſers were equipped with twelve guns each, and the other with eight. The French ſailors were, after boarding, ſo much expoſed to the continued fire of muſquetry, and cochorns charged with granadoes, that a dreadful ſcene of carnage enſued, in which the decks were ſoon covered with the dead bodies of the enemy, ſeveral of which the boarders, in their hurry to eſcape, had left behind.

CLUE *of a ſail*, (*point*, Fr.) the lower corner; and hence

CLUE-GARNETS, (*cargues point*, Fr.) are a ſort of tackles faſtened to the *clues*, or lower corners of the mainſail and foreſail, to truſs them up to the yard as occaſion requires, which is uſually termed *clueing-up* the ſails.

CLUE-LINES are for the ſame purpoſe as clue-garnets, only that the latter are confined to the courſes, whereas the clue-lines are common to all the ſquare-ſails. See theſe ropes, as repreſented in the article SAIL.

COACH, or COUCH, a ſort of chamber or apartment in a large ſhip of war near the *ſtern*. The floor of it is formed by the aftmoſt part of the quarter-deck, and the roof of it by the poop: it is generally the habitation of the captain.

COAMINGS *of the hatches*, certain raiſed borders about the edge of the hatches of a ſhip, to prevent the water which may flow in upon the deck at ſea, from running down into the lower apartments. They are repreſented in the DECK, plate III. as encloſing their reſpective hatchways.

COASTING, (*aller terre à terre*, Fr.) in navigation, the act of making a progreſs along the ſea-coaſt of any country. The principal articles relating to this part of navigation are, the obſerving the time and direction of the tide; knowledge of the reigning winds; of the roads and havens; of the different depths of the water, and qualities of the ground.

COASTING-PILOT, *(cotier*, Fr.) a pilot, who by long experience has become ſufficiently acquainted with the nature of any particular coaſt, and of the requiſites mentioned in the preceding article, to conduct a ſhip or fleet from one part of it to another.

COAT, *(braye*, Fr.) a piece of tarred canvas nailed round that part of the maſts and bowſprit which joins to the deck, or lies over the ſtem of a ſhip. It is uſed to prevent the water from running down into the hold, or between the decks.

Beſides thoſe above mentioned, there is a coat for the rudder nailed round the hole where the rudder traverſes in the ſhip's counter. This hole is repreſented at the upper part of the ſtern-poſt, exhibited in plate X.

Coat, *(ſuage*, Fr.) alſo implies the materials or *ſtuff* with which the ſhip's ſides or maſts are varniſhed, to preſerve them from the ſun and weather, as turpentine, tar, &c. In this ſenſe we ſay, " Give her a good coat of tar."

COBBING, a puniſhment ſometimes inflicted at ſea. It is performed by ſtriking the offender a certain number of times on the breech with a flat piece of wood called the cobbing-board. It is chiefly uſed as a puniſhment to thoſe who quit their ſtation during the period of the night-watch.

Cobbing-Board, *(baton de juſtice*, Fr.)

COBOOSE, *(fogone*, Fr. *kambuis*, Dutch) a ſort of box or houſe to cover the chimney of ſome merchant-ſhips. It ſomewhat reſembles a centry-box, and generally ſtands againſt the barricade on the fore part of the quarter-deck.

COCK-PIT *of a ſhip of war*, the apartments of the ſurgeon and his mates, being the place where the wounded men are dreſſed in the time of battle, or otherwiſe. It is ſituated under the lower-deck.

COCKSWAIN, or COXEN, the officer who manages and ſteers a boat, and has the command of the boat's crew. It is evidently compounded of the words *cock* and *ſwain*, the former of which was anciently uſed for a yawl or ſmall boat, as appears by ſeveral authors *; but it has now become obſolete, and is never uſed by our mariners.

COD-FISHER, *(caplanier*, Fr.) name of a veſſel employed to cure cod; alſo the men appointed for that ſervice.

COIL, *(cueillir*, Fr.) the manner in which all ropes are diſpoſed aboard ſhips for the conveniency of ſtowage; becauſe

COILING, *(rouer*, Fr.) implies a ſort of ſerpentine winding of a cable or other rope, that it may occupy a ſmall ſpace in the ſhip. Each of the windings of this ſort is called a *fake*, and one range of fakes upon the ſame line is called a *tier*; there are generally from five to ſeven fakes in a tier; and three or four tiers in the whole length of the cable. This,

* —— Yon tall anchoring bark
Diminiſh'd to her cock; her cock a buoy, &c.
Shakespeare.

however,

however, depends on the extent of the ſakes. The ſmaller ropes employed about the ſails are coiled upon *cleats* at ſea, to prevent their being entangled amongſt one another in traverſing, contracting, or extending the ſails.

COLLAR *(collier d'étai*, Fr.) a name given to the lower part of any of the principal ſtays of the maſts, or the part by which the ſtay is confined at it's lower end. Thus the collar of the main-ſtay connects the lower end of the ſtay to the ſhip's ſtem. See the article STAY.

COLLIERS, certain veſſels employed to carry coals from one port to another, chiefly from the northern parts of England to the capital, and more ſoutherly parts, as well as to foreign markets. This trade is known to be an excellent nurſery for ſeamen, although they are often found, from the conſtitution of their climate, to be not ſo well calculated for ſouthern navigation.

COLOURS, the flags or banners which diſtinguiſh the ſhips of different nations. See the articles ENSIGN, JACK, and PENDENT.

COMING-TO. See the article TRYING.

COMMAND, in the royal navy, implies the rank and power of an officer who has the management of a ſhip of war, of whatever kind, under twenty guns, as ſloops of war, armed ſhips, or bomb-veſſels. He is intitled *maſter* and *commander*, *(capitaine du petit état*, Fr.) and ranks with a major in the King's army.

COMMANDER is alſo expreſſed of a large wooden mallet uſed on ſundry occaſions in a ſhip.

COMMISSIONERS *of the navy*, certain officers appointed to ſuperintend the affairs of the marine, under the direction of the lord-high-admiral, or lords commiſſioners of the admiralty.

The duty of theſe officers does not extend to the internal government of ſhips inveſted with a military command, either at ſea or in the port. It is more immediately concerned in the building, docking, repairing, and cleaning of ſhips in the dock-yards. In conſideration of this, all ſhips of war are commiſſioned from a report of their qualities preſented to the Admiralty by the Navy-board.

They have alſo the appointment of ſome of the inferior ſea-officers, as ſurgeons and maſters of ſhips.

The principal officers and commiſſioners reſiding at the board, are, 1. The comptroler. 2. Two ſurveyors, who are ſhipwrights. 3. Clerk of the acts. 4. Comptroler of the treaſurer's accounts. 5. Comptroler of the victualing accounts. 6. Comptroler of the ſtore-keeper's accounts. 7. An extraordinary commiſſioner. Beſides theſe, there are three reſident commiſſioners, who manage the affairs of the *dock-yards* at Chatham, Portſmouth, and Plymouth, under the direction of the board at the Navy-office.

COMMODORE, *(chef d'eſcadre*, Fr.) a general officer in the Britiſh marine, inveſted with the command of a detachment of ſhips of war deſtined on any particular enterpriſe; during which time he bears the rank of brigadier-general in the army, and is diſtinguiſhed from the inferior

ſhips of his ſquadron by a broad red pendent tapering towards the outer-end, and ſometimes forked. The word is corrupted from the Spaniſh *comendador*.

COMMODORE is alſo a name given to ſome ſelect ſhip in a fleet of merchantmen, who leads the van in time of war, and carries a light in his top, to conduct the reſt and keep them together.

COMPANION, a ſort of wooden porch placed over the entrance or ſtair-caſe of the maſter's cabin in a merchant-ſhip.

COMPANY, the whole crew of any ſhip, including her officers.

COMPASS, an inſtrument employed to determine the ſhip's courſe at ſea, and conſiſting of a card and two boxes. The card, which is calculated to repreſent the horizon, is a circle divided into thirty-two equal parts, by lines drawn from the center to the circumference, called points or rhumbs. The intervals between the points are alſo ſubdivided into equal parts called degrees, 360 of which complete the circle; and conſequently the diſtance or angle comprehended between any two rhumbs is equal to 11°, 15′. The four principal rhumbs are called the *cardinal points*, deriving their names from the places to which they tend; viz. the two which extend themſelves under the meridian, oppoſite to each other, pointing to the north and ſouth, are called the *north* and *ſouth* points. That which is towards the right hand as we look north is termed *eaſt*, and it's oppoſite the *weſt* point. The names of all the inferior ones are compounded of theſe, according to their ſituation. Along the north and ſouth line is fixed a ſteel needle, which being touched by the load-ſtone acquires a certain virtue that makes it hang nearly in the plane of the meridian, and conſequently determine the direction of the other points toward the horizon.

The compaſs being of the utmoſt importance to the purpoſes of navigation, it is reaſonable to expect that the greateſt attention ſhould be uſed in it's conſtruction, and every attempt to improve it carefully examined, and adopted, if proper. Great errors and irregularities, however, have been found incident to the conſtruction of common compaſſes, ariſing from the ſhape of their needles, by which they have not only turned from the true direction, but from that of each other*.

* The wires, of which the needle has hitherto been generally compoſed, were only hardened at their ends; now if thoſe ends are not equally hard, or if one end be hardened up higher than the other, when they come to be put together, in fixing them to the card, that end which is hardeſt will deſtroy much of the virtue of the other; by which means the hardeſt end will have the greateſt power in directing the card, and conſequently make it vary towards it's own direction; and, as the wires are diſpoſed in the form of a lozenge, theſe cards can have but little force; ſo that they will often, when drawn aſide, ſtand at the diſtance of ſeveral degrees on either ſide the point from whence they are drawn; for all magnetical bodies receive an additional ſtrength by being placed in the direction of the earth's magnetiſm, and act proportionably leſs vigorouſly when turned out of it. Therefore when theſe kind of needles are drawn aſide from their true point, two of the parallel ſides of the lozenge will conſpire more directly than before with the earth's magnetiſm, and the other two will be leſs in that direction: by this means the two former ſides will very much impede it's return, and the two latter will have that impediment to overcome, as well as the friction, by their own force alone.

To remedy theſe inconviencies, the learned Dr. Knight was induced to contrive a new ſea-compaſs, which is now uſed aboard all our veſſels of war*. The needles of the other inſtruments were generally compoſed of two pieces of ſteel wire, bent in the middle, and approaching each other towards the ends, where they meet. Others were made of one piece of ſteel of a ſpring temper, and broad towards the ends, but tapering towards the middle; but the needle in Dr. Knight's compaſs is quite ſtrait, and ſquare at the ends, and conſequently has only two poles, although the curves are a little confuſed about the hole in the middle. Needles of this conſtruction, after vibrating a long time, will always point exactly in the ſame direction; and if drawn ever ſo little on one ſide will return to it again, without any ſenſible difference.

In order to illuſtrate the above deſcription, we have exhibited a view of the ſeveral parts of the compaſs, plate II. where fig. 19. is the card, with the needle N S, and it's cap fixed upon it.

Fig. 21, is the pedeſtal that ſupports the card, containing a ſewing needle fixed in two ſmall grooves to receive it, by means of a collet C, in the manner of a port-crayon. D, the ſtem, is filed into an octogon, that it may the more eaſily be unſcrewed.

A B, fig. 20. is the box in which the compaſs hangs in the binacle.

C D, is the ring that ſupports the inner box.

E F, is the inner box, which contains the card and needle.

G H, one of it's axes, by which it is ſuſpended on the ring C D.

I. is a place cut out in the wood, ſerving as an handle.

The magnet or needle appears paſſing through the center, together with a ſmall brace of ivory that confines the cap to it's place.

The card is a ſingle varniſhed paper, reaching as far as the outer circle of figures, which is a circle of thin braſs; the edge whereof is turned down at right angles to the plane of the card, in order to ſtiffen it.

The compaſs is retained in the binacle at ſea, as exhibited in plate I. fig. 6. For the other parts of the compaſs repreſented in the figure, ſee the article AZIMUTH.

COMPASSING, *(devers*, Fr.) a name given by ſhipwrights to ſuch pieces of timber as are incurvated into the figure of an arch, whether circular, elliptical, or otherwiſe.

COMPLEMENT, the limited number of men employed in any ſhip, either for navigation or battle.

COMPTROLER *of the navy*, one of the principal officers of the Navy-board, at which he preſides, to direct the inferior and civil department of

* It is neceſſary to obſerve here, that the principal, and indeed the only circumſtance in which Knight's compaſſes are ſuperior to thoſe which have hitherto obtained, is, that their needles being tempered much higher than uſual, are thereby enabled to contain a much greater quantity of the magnetical ſtream, which is certainly a real advantage. But, on the other hand, experience ſufficiently proves, and truth obliges us to remark, that the methods he has taken to balance the card with more accuracy than had been formerly attempted, have rendered it by far too delicate to encounter the ſhocks of a tempeſtuous ſea.

the marine, as the admiralty ſuperintends the ſuperior and military operations of it.

CONVOY, (*conſerve*, *convoyer*, Fr.) a fleet of merchant-ſhips bound on a voyage to ſome particular part or general rendezvous.

Convoy alſo implies the ſhip or ſhips appointed to conduct and defend them on their paſſage thither.

CORDAGE, (*cordage*, Fr.) a general term for the running *rigging* of a ſhip, or all that part of her rigging which is employed to extend, contract, or traverſe the ſails; or which lies in reſerve to ſupply the place of ſuch as may be rendered unſerviceable. See the article Rigging.

CORPORAL *of a ſhip of war*, an officer under the maſter at arms, employed to teach the ſailors the exerciſe of ſmall arms, or muſketry; to attend at the gangway, or entering-ports, and obſerve that no ſpirituous liquors are brought into the ſhip, unleſs by particular leave from the officers. He is alſo to extinguiſh the fire and candles at eight o'clock in winter, and nine in ſummer, when the evening gun is fired; and to walk frequently down in the lower decks in his watch, to ſee that there are no lights but ſuch as are under the charge of proper centinels.

CORPOSANT, (*feu St. Elme*, Fr. *corpo ſanto*, Ital.) a ſort of volatile meteor, or *ignis fatuus*, often beheld in a dark and tempeſtuous night about the decks or rigging of a ſhip, but particularly at the extremities, as the maſt-heads, and yard-arms: it is moſt frequent in heavy rain, accompanied with lightening. "They uſually wander with uncertain motion from place to place, ſometimes appearing to cleave cloſe to the ſails and maſts; but they frequently leap up and down with intermiſſion, affording an obſcure flame, like that of a candle burning faintly. They are produced by ſome ſulphureous and bituminous matter, which being beat down by the motion of the air above, and gathering together, is kindled by the agitation of the air, as butter is gathered together by the agitation of the cream. And from this appearance we infer that ſtorms come from ſulphureous ſpirits that rarify the air, and put it into a motion." *Varenius.*

CORSAIR, (*corſair*, Fr.) a name commonly given to the piratical cruiſers of Barbary, who frequently plunder the merchant-ſhips of European nations with whom they are at peace.

COTT, a particular ſort of bed-frame, ſuſpended from the beams of a ſhip, for the officers to ſleep in between the decks. This contrivance is much more convenient at ſea than either the hammocks or fixed cabins, being a large piece of canvas ſewed into the form of a cheſt, about ſix feet long, one foot deep, and from two to three feet wide: it is extended by a ſquare wooden frame with a canvas bottom, equal to it's length and breadth, to retain it in an horizontal poſition.

COVE, (*abrianſe*, Fr.) a ſmall creek or bay, where boats or little veſſels may ride at anchor ſheltered from the wind and ſea under a weather ſhore.

COUNTER, (*contre arcaſſe*, Fr.) an arch or vault whoſe upper-part is terminated by the bottom of the *ſtern*, and the lower-part by the wing-

tranſom

tranſom and buttock, being expreſſed by the letters K G, in the elevation, plate I. as likewiſe by the ſame letters in fig. 1. plate X. and the figure referred to from the article QUARTER.

There is alſo another counter above, parallel to this, but not vaulted; it extends from the upper-part of the lower, or vaulted, counter, to the moulding which terminates the windows of the cabin or ward-room below. This latter is uſually called the upper or ſecond counter.

COUNTER-BRACING. See this operation fully explained in the article TACKING.

COURSE, (*route*, Fr.) in navigation, the angle contained between the neareſt meridian and that point of the compaſs upon which a ſhip ſails in any particular direction.

Oblique COURSE, (*Loxodromie*, Fr.) a courſe which croſſes the meridian at equal and oblique angles.

COURSES, (*pacfis*, *baſſes voiles*, Fr.) a name by which the principal ſails of a ſhip are uſually diſtinguiſhed, viz. the main-ſail, fore-ſail, and mizen: the mizen-ſtay-ſail and fore-ſail are alſo ſometimes comprehended in this denomination, as are the main-ſtay-ſails of all brigs and ſchooners. See the article SAIL.

CRAB, a ſort of wooden pillar, whoſe lower end, being let down through a ſhip's decks, reſts upon a ſocket like the capſtern; and having in it's upper-end three or four holes, at different heighths; thro' the middle of it, above one another, into which long bars are thruſt, whoſe length is nearly equal to the breadth of the deck. It is employed to wind in the cable, or to purchaſe any other weighty matter which requires a great mechanical power. This differs from a capſtern, as not being furniſhed with a *drum-head*, and by having the bars to go intirely through it, reaching from one ſide of the deck to the other; whereas thoſe of the capſtern, which are ſuperior in number, reach only about eight inches or a foot into the drum-head, according to the ſize thereof This machine is repreſented in plate II. by fig. 10. and 13. See alſo CAPSTERN.

CRADLE, (*ſlee*, Fr.) a frame placed under the bottom of a ſhip, in order to conduct her ſmoothly and ſteadily into the water when ſhe is to be lanched; at which time it ſupports her weight whilſt ſhe ſlides down the deſcent, or ſloping paſſage called the *ways*, which are for this purpoſe daubed with ſoap and tallow. This frame is exhibited by fig. 23. plate II.

CRAFT, a general name for all ſorts of veſſels employed to load or diſcharge merchant-ſhips, or to carry along-ſide, or return the ſtores of men of war: ſuch are lighters, hoys, barges, prames, &c. See thoſe articles.

CRANK, (*coté-foible*, Fr.) the quality of a ſhip, which for want of a ſufficient quantity of *ballaſt* or cargo, is rendered incapable of carrying ſail without being expoſed to the danger of overſetting. See the articles BALLAST and TRIM.

CRANK, is alſo an iron brace which ſupports the lanthorns on the poop-quarters, &c.

CRAWL, (*bouchot*, Fr.) a ſort of pen, or place of confinement, formed by a barrier of ſtakes and hurdles on the ſea-coaſt, to contain any ſort of fiſh within it.

CREEPER, an inſtrument of iron reſembling a grappling, having a *ſhank* and four hooks or claws, fig. 24. plate II. It is uſed to throw into the bottom of any river or harbour, with a rope faſtened to it, to hook and draw up any thing from the bottom which may have been loſt.

CREW *of a ſhip*, (*equipage*, Fr.) comprehends the officers, ſailors, ſeamen, marines, ordinary men, ſervants and boys; but excluſive of the captain and lieutenants, in the French ſervice.

CRINGLE, (*ancet*, Fr.) a ſmall hole made in the *bolt-rope* of a ſail, by intertwiſting one of the diviſions of a rope, called a *ſtrand*, alternately round itſelf and through the *ſtrands* of the bolt-rope, till it becomes threefold, and aſſumes the ſhape of a wreath or ring. See plate II. fig. 25. where a, b, repreſents part of the bolt-rope of a ſail; and c, the cringle.

The uſe of the cringle is generally to contain the end of ſome rope, which is faſtened thereto, for the purpoſe of drawing up the ſail to it's yard, or of extending the ſkirts by the means of *bridles* to ſtand upon a ſide-wind. The word ſeems to be derived from *krinckelen*, (Belg.) to run into twiſts.

CROSS-JACK, pronounced *crojeck*, a ſail extended on the lower yard of the *mizen*-maſt, which is hence called the *croſs-jack yard*, (*vergue ſeche*, Fr.) This ſail, however, has generally been found of little ſervice, and is therefore very ſeldom uſed.

CROSS-PIECE, (*raſteau*, Fr.) a rail of timber extended over the *windlaſs* of a merchant-ſhip from the knight-heads to the belfry. It is ſtuck full of wooden pins, which are uſed to faſten the running-rigging as occaſion requires. See the article WINDLASS.

CROSS-TREES, (*barres de hune*, Fr.) certain pieces of timber ſupported by the *cheeks* and treſtle-trees, at the upper-ends of the lower-maſts, athwart which they are laid, to ſuſtain the frame of the *top*.

CROTCHES, (*fourcats*, Fr. *croccia*, Ital.) a name given to thoſe crooked timbers that are placed upon the keel in the fore and hind-parts of a ſhip, upon which the frame of her hull grows narrower below, as it approaches the ſtem afore, and the ſtern-poſt abaft.

CROTCHES, (*cornes*, Fr.) are alſo certain pieces of wood or iron, whoſe upper-part opens into two horns, or arms, like a half-moon. They are fixed in different places of the ſhip, according to the uſes for which they may be deſigned, which is uſually to ſupport the ſpare-maſts, yards, &c. The iron crotches are exhibited in plate II. fig. 26.

CROW, an iron lever well known in mechanics, and furniſhed with a ſharp point at one end, and two claws at the other, as appears in fig. 27. plate II.

This inſtrument is uſed for various purpoſes, by ſhipwrights and mariners; as to remove pieces of timber, and other weighty bodies; and to draw ſpike-nails, &c. as well as to manage the great guns, by moving them into their ports, levelling or pointing them to a particular object.

To

To CROWD, (*forcer de voiles*, Fr. *cruth*, Sax.) to carry an extraordinary force of ſail upon a ſhip, in order to accelerate her courſe on ſome important occaſion, as in purſuit of, or flight from, an enemy; to eſcape any immediate danger, &c.

CROW-FOOT, (*trelingage*, Fr.) a complication of ſmall cords ſpreading out from a long block, like the ſmaller parts which extend from the back-bone of a herring. See plate II. fig. 28. It is uſed to ſuſpend the *awnings*; or to keep the *top-ſails* from ſtriking violently and fretting againſt the edges of the tops.

CROWNING, the finiſhing part of a knot made on the end of a rope. It is performed by interweaving the ends of the different ſtrands artfully amongſt each other, ſo as that they may not become looſened or untwiſted. The deſign of theſe knots is to keep the end of the rope faſt in ſome place aſſigned for it: they are more particularly uſeful in all kinds of ſtoppers.

CRUISE, (*campaigne croiſer*, Fr.) a voyage or expedition in queſt of veſſels or fleets of the enemy, which may be expected to ſail through any particular tract of the ſea at a certain ſeaſon of the year. The region in which theſe cruiſes are performed is uſually termed the rendezvous, or cruiſing-latitude. When the ſhips employed for this purpoſe, which are accordingly called cruiſers, have arrived at their deſtined ſtation, they traverſe the ſea backward and forward, under an eaſy ſail, and within a limited ſpace, conjectured to be nearly in the track of their expected adverſaries.

CUDDY, (*coqueron*, Fr.) a ſort of cabin, or cook-room, in the fore-part, or near the ſtern, of a lighter or barge of burden.

CUNNING, (*faire gouverner*, Fr.) the art of directing the ſteerſman to guide the ſhip in her proper courſe: the officer who performs this duty is either the pilot or quarter-maſter.

CURRENT, (*courans*, Fr. *currens*, Lat.) in navigation, a certain progreſſive movement of the water of the ſea, by which all bodies floating therein are compelled to alter their courſe, or velocity, or both, and ſubmit to the laws impoſed on them by the current.

In the ſea, currents are either natural and general, as ariſing from the diurnal rotation of the earth about it's axis; or accidental and particular, cauſed by the waters being driven againſt promontories, or into gulfs and ſtreights; where, wanting room to ſpread, they are driven back, and thus diſturb the ordinary flux of the ſea.

" Currents are various, and directed towards different parts of the ocean, of which ſome are conſtant, and others periodical. The moſt extraordinary current of the ſea is that by which part of the Atlantic or African ocean moves about Guinea from Cape Verd towards the curvature or bay of Africa, which they call Fernando Poo, viz. from weſt to eaſt, contrary to the general motion. And ſuch is the force of this current, that when ſhips approach too near the ſhore, it carries them violently towards that bay, and deceives the mariners in their reckoning.

" There is a great variety of ſhifting currents, which do not laſt, but return at certain periods; and theſe do, moſt of them, depend upon, and follow the anniverſary winds or monſoons, which by blowing in one place may cauſe a current in another *." *Varenius.*

In the ſtreights of Gibraltar the currents almoſt conſtantly drive to the eaſtward, and carry ſhips into the Mediterranean: they are alſo found to drive the ſame way into St. George's-channel.

The ſetting, or progreſſive motion of the current, may be either quite down to the bottom, or to a certain determinate depth.

As the knowledge of the direction and velocity of currents is a very material article in navigation, it is highly neceſſary to diſcover both, in order to aſcertain the ſhip's ſituation and courſe with as much accuracy as poſſible. The moſt ſucceſsful method which has been hitherto attempted by mariners for this purpoſe, is as follows. A common iron pot, which may contain four or five gallons, is ſuſpended by a ſmall rope faſtened to it's ears or handles, ſo as to hang directly upright, as when placed upon the fire. This rope, which may be from 70 to 100 fathoms in length, being prepared for the experiment, is coiled in the boat, which is hoiſted out of the ſhip at a proper opportunity, when there is little or no wind to ruffle the ſurface of the ſea. The pot being then thrown overboard into the water, and immediately ſinking, the line is ſlackened till

* " At Java, in the ſtreights of Sunda, when the monſoons blow from the weſt, viz, in the month of May, the currents ſet to the eaſtward, contrary to the general motion.

" Alſo between the iſland of Celebes and Madura, when the weſtern monſoons ſet in, viz. in December, January, and February, or when the winds blow from the N. W. or between the north and weſt, the currents ſet to the S. E. or between the ſouth and eaſt.

" At Ceylon, from the middle of March to October, the currents ſet to the ſouthward, and in the other parts of the year to the northward; becauſe at this time the ſouthern monſoons blow, and at the other, the northern.

" Between Cochin-China and Malacca, when the weſtern monſoons blow, viz. from April to Auguſt, the currents ſet eaſtward againſt the general motion, but the reſt of the year ſet weſtward; the monſoon conſpiring with the general motion. They run ſo ſtrongly in theſe ſeas, that unexperienced ſailors miſtake them for waves that beat upon the rocks known by the name of breakers.

" So for ſome months after the fifteenth of February the currents ſet from the Maldivies towards India on the eaſt, againſt the general motion of the ſea.

" On the ſhore of China and Cambodia, in the months of October, November, and December, the currents ſet to the N. W. and from January to the S. W. when they run with ſuch a rapidity of motion about the ſhoals of Parcel, that it ſeems ſwifter than that of an arrow.

" At Pulo Condore, upon the coaſt of Cambodia, though the monſoons are ſhifting, yet the currents ſet ſtrongly towards the eaſt, even when they blow to a contrary point.

" Along the coaſts of the bay of Bengal, as far as the cape Romania, at the extreme point of Malacca, the current runs ſouthward in November and December.

" When the monſoons blow from China to Malacca, the ſea runs ſwiftly from Pulo Cambi to Pulo Condore, on the coaſt of Cambodia.

" In the bay of Sans Bras, not far from the Cape of Good Hope, there is a current particularly remarkable, where the ſea runs from eaſt to weſt to the landward; and this more vehemently as it becomes oppoſed by the winds from a contrary direction. The cauſe is undoubtedly owing to ſome adjacent ſhore, which is higher than this." *Varenius.*

Theſe currents conſtantly follow the winds, and ſet to the ſame point with the monſoon, or trade-wind, at ſea. See MONSOON.

about

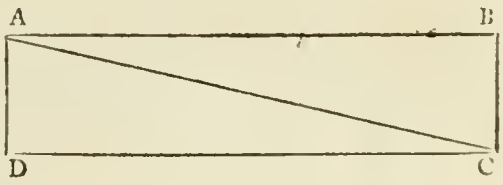
about ſeventy or eighty fathoms run out, after which the line is faſtened to the boat's ſtem, by which ſhe is accordingly reſtrained, and rides as at anchor. The velocity of the current is then eaſily tried by the *log* and half-minute glaſs, the uſual method of diſcovering the rate of a ſhip's ſailing at ſea. The courſe of the ſtream is next obtained by means of the compaſs provided for this operation.

Having thus found the ſetting and drift of the current, it remains to apply this experiment to the purpoſes of navigation. If the ſhip ſails along the direction of the current, then the motion of the ſhip is increaſed by as much as is the drift or velocity of the current.

If a current ſets directly againſt the ſhip's courſe, then her motion is retarded in proportion to the ſtrength of the current. Hence it is plain, 1. If the velocity of the current be leſs than that of the ſhip, then the ſhip will advance ſo much as is the difference of theſe velocities. 2. If the velocity of the current be more than that of the ſhip, then will the ſhip fall as much *aſtern* as is the difference of theſe velocities. 3. If the velocity of the current be equal to that of the ſhip, then will the ſhip ſtand ſtill, the one velocity deſtroying the other.

If the current thwarts the courſe of a ſhip, it not only diminiſhes or increaſes her velocity, but gives her a new direction, compounded of the courſe ſhe ſteers, and the ſetting of the current, as appears by the following

L E M M A.



If a body at A be impelled by two forces at the ſame time, the one in the direction A B, carrying it from A to B in a certain ſpace of time, and the other in the direction A D, puſhing it from A to D in the ſame time; complete the parallelogram A B C D, and draw the diagonal A C: then the body at A, (which let us ſuppoſe a ſhip agitated by the wind and current; A B being the line along which ſhe advances as impreſſed by the wind, and A D the line upon which ſhe is driven by the current) will move along the diagonal A C, and will be in the point C, at the end of the time in which it would have moved along A D or A B, as impelled by either of thoſe forces, (the wind or current) ſeparately.

CUTTER, (*bateau*, Fr.) a ſmall veſſel commonly navigated in the channel of England; it is furniſhed with one maſt, and rigged as a *ſloop*. Many of theſe veſſels are uſed on an illicit trade, and others employed by the government to ſeize them; the latter of which are either under the direction of the Admiralty or Cuſtom-houſe. See a repreſentation of a cutter of this ſort in the plate referred to from the article VESSEL.

CUTTER is alſo a ſmall boat uſed by ſhips of war. See BOAT.

CUTTING-DOWN LINE, a curved line uſed by ſhipwrights in the delineation of ſhips: it determines the thickneſs of all the floor-timbers, and likewiſe the heighth of the *dead-wood*, *afore* and *abaft*. It is limited in the middle of the ſhip by the thickneſs of the floor-timber, and abaft by the breadth of the *kelſon*; and muſt be carried up ſo high upon the ſtem, as to leave ſufficient ſubſtance for the breeches of the riſing timbers. *Murray's Ship-building*.

CUT-WATER, the foremoſt part of a ſhip's prow, formed of an aſſemblage of ſeveral pieces of timber, to render it broad at the upper-part, where it projects forward from the ſtem to open the column of water as the ſhip ſails along, and alſo to make her keep to windward better, when ſhe is cloſe-hauled. It is otherwiſe called the knee of the head. See the article STEM; ſee alſo the ſeveral parts of it repreſented in plate I. PIECES *of the* HULL.

D.

DAM, *(batardeau*, Fr.) a piece of water confined within banks.

DAVIT, *(minot*, Fr.) a long beam of timber, repreſented by a, a, plate II. fig. 29. and uſed as a crane, whereby to hoiſt the flukes of the anchor to the top of the *bow*, without injuring the planks of the ſhip's ſide as it aſcends; an operation which by mariners is called fiſhing the anchor. The anchors being ſituated on both the bows, the davit may be occaſionally ſhifted ſo as to project over either ſide of the ſhip, according to the poſition of that anchor on which it is to be employed. The inner-end of the davit is ſecured by being thruſt into a ſquare ring of iron b, which is bolted to the deck, and fore-locked under the beams. This ring, which is called the ſpan-ſhackle, exhibited at large by fig. 34. is fixed exactly in the middle of the deck, and cloſe behind the fore-maſt. Upon the outer-end of the davit is hung a large block c, through which a ſtrong rope traverſes, called the fiſh-pendent d, to whoſe foremoſt end is fitted a large iron hook e, and to it's after end a tackle or complication of pullies f, the former of which is called the fiſh-hook, and the latter the fiſh-tackle.

The davit therefore, according to the ſea-phraſe, is employed to *fiſh the anchor*, which being previouſly *catted*, the fiſh-hook is faſtened upon it's flukes; and the effort of the tackle, being tranſmitted to the hook by means of the fiſh-pendent, draws up that part of the anchor ſufficiently high upon the bow to faſten it, which is done by the *Shank-painter*. See that article.

There is alſo a davit of a ſmaller kind, occaſionally fixed in the longboat, and employed to weigh the anchor therein.

DAY'S-WORK, *(cinglage*, Fr.) the reckoning or account of the ſhip's courſe, during twenty-four hours, or between noon and noon, according to the rules of trigonometry. See DEAD-RECKONING.

DEAD-EYE, *(cap de mouton*, Fr.) a ſort of round, flattiſh, wooden block, ſee fig. 30. plate II. It is uſually encircled with the end of a rope, or with an iron band, fig. 31. *b*, and pierced with three holes through the flat, in order to receive the rope called a *laniard c*, which, correſponding with three holes in another dead-eye *a*, creates a purchaſe employed for various uſes, but chiefly to extend the *ſhrouds* and *ſtays*, otherwiſe called the ſtanding-rigging.

In order to form this purchaſe, one of the dead-eyes is faſtened in the lower-end of each ſhroud, and the oppoſite one in the upper-link of each *chain* on the ſhip's ſide, which is made round to receive and encompaſs the hollowed outer-edge of the dead-eye. After this the laniard is

is paſſed alternately through the holes in the upper and lower dead-eyes till it becomes ſix-fold; and is then drawn tight by the application of mechanical powers. The general diſpoſition of the dead-eyes in their channels is repreſented in the Elevation, plate I. In merchant-ſhips they are generally fitted with iron plates in the room of chains. Theſe laſt are exhibited in fig. 16. plate II.

The dead-eyes uſed for the ſtays, (*moques*, Fr.) have only one hole, which, however, is large enough to receive ten or twelve turns of the laniard: theſe are generally termed *hearts*, and are expreſſed by fig. 32.

There are alſo dead-eyes of another form, employed for the *crow-feet*, (*moques de trelingage*, Fr.) Theſe are long cylindrical blocks, fig. 33. with a number of ſmall holes in them, to receive the legs or lines of which the crow-foot, fig. 28. is compoſed.

DEAD-LIGHTS, certain wooden ports which are made to faſten into the cabin-windows, to prevent the waves from guſhing into a ſhip in a high ſea. As they are made exactly to fit the windows, and are ſtrong enough to reſiſt the waves, they are always fixed in, on the approach of a ſtorm, and the glaſs frames taken out, which might otherwiſe be ſhattered to pieces by the ſurges, and ſuffer great quantities of water to enter the veſſel.

DEAD-RECKONING, (*eſtime*, Fr.) in navigation, the judgment or eſtimation which is made of the place where a ſhip is ſituated, without any obſervation of the heavenly bodies. It is diſcovered by keeping an account of the diſtance ſhe has run by the *log*, and of her couſe ſteered by the *compaſs*; and by rectifying theſe data by the uſual allowances for *drift*, *lee-way*, &c. according to the ſhip's known trim. This reckoning, however, is always to be corrected, as often as any good obſervation of the ſun can be obtained.

DEAD-RISING, or RISING-LINE *of the floor*, (*fleurs*, Fr.) thoſe parts of a ſhip's floor, or bottom, throughout her whole length, where the floor-timber is terminated upon the lower futtock. See the article *Naval* ARCHITECTURE.

DEAD-WATER, (*remoux*, Fr.) the eddy of water which appears like little whirl-pools, cloſing in with the ſhip's ſtern as ſhe ſails through it.

DEAD-WOOD, (*contre-quille*, Fr.) a name given by ſhipwrights to certain blocks of timber laid upon the keel, particularly at the extremities afore and abaft, where theſe pieces are placed one upon another to a conſiderable heighth, becauſe the ſhip is there ſo narrow as not to admit of the two half-timbers, which are therefore ſcored into this dead-wood, where the angle of the floor-timbers gradually diminiſhes, as approaching the ſtem and ſtern-poſt. See the article *Naval* ARCHITECTURE.

In the fore-part of the ſhip, the dead-wood generally extends from the ſtemſon, upon which it is ſcarfed to the loof-frame; and in the after-end from the ſtern-poſt, where it is confined by the knee, to the after-balance-frame. It is connected to the keel by ſtrong ſpike-nails. Thoſe pieces are repreſented by e e, PIECES *of the* HULL, plate I.

The

The dead-wood afore and abaft is equal in depth to two thirds of the depth of the keel, and as broad as can be procured, ſo as not to exceed the breadth of the keel.

DEAD-WORK, all that part of a ſhip which is above water when ſhe is laden. See the article UPPER-WORK.

DECKS, *ponts*, Fr. *decken*, Dan. to cover) the planked floors of a ſhip, which connect the ſides together, and ſerve as different platforms to ſupport the artillery, and lodge the men, as alſo to preſerve the cargo from the ſea in merchant-veſſels.

As all ſhips are broader at the lower-deck than on the next above it, and as the cannon thereof are always heavieſt, it is neceſſary that the frame of it ſhould be much ſtronger than that of the others; and, for the ſame reaſon, the ſecond or middle-deck ought to be ſtronger than the upper-deck, or forecaſtle.

Ships of the firſt and ſecond rates are furniſhed with three whole decks, reaching from the ſtem to the ſtern, beſides a forecaſtle and a quarter-deck, which extends from the ſtem to the main-maſt, between which and the forecaſtle, a vacancy is left in the middle, opening to the upper-deck, and forming what is called the *waiſt*. There is yet another deck above the hinder or aftmoſt part of the quarter deck, called the poop, which alſo ſerves as a roof for the captain's cabin or couch.

The inferior ſhips of the line of battle are equipped with two decks and a half, and frigates, ſloops, &c. with one gun-deck and a half, with a ſpar deck below to lodge the crew.

The decks are formed and ſuſtained by the beams, the clamps, the water-ways, the carlings, the ledges, the knees, and two rows of ſmall pillars, called ſtanchions, &c. See thoſe articles.

That the figure of a deck, together with it's correſponding parts, may be more clearly underſtood, we have exhibited a plan of the lower-deck of a 74 gun-ſhip in plate III. And as both ſides of the deck are exactly ſimilar, the pieces by which it is ſupported appear on one ſide, and on the other ſide the planks or floor of which it is compoſed, as laid upon thoſe pieces.

EXPLANATION of the figures repreſented in the DECK, plate III.

A, the principal, or main hatch-way.

B, the ſtern-poſt.

C, the ſtem.

D, the beams, compoſed of three pieces, as exhibited by D, in one of which the dotted lines ſhew the arrangement of one of the beams under the other ſide of the deck.

E, part of the vertical or hanging knee. See alſo ε, fig. 16. in the ſame plate.

F, the horizontal or lodging knees, which faſten the beams to the ſides.

G, the carlings, ranging fore and aft, from one beam to another.

H, the gun-ports.

I, the pump-dales, being large wooden tubes which return the water from the pumps into the ſea.

K, the ſpurs of the beams; being curved pieces of timber ſerving as half-beams to ſupport the decks, where a whole beam cannot be placed on account of the hatch-ways.

L, the wing-tranſom, which is bolted by the middle to the ſtern-poſt, and whoſe ends reſt upon the faſhion-pieces.

M, the bulk-head or partition, which encloſes the manger, and prevents the water which enters at the hawſe-holes from running aft between decks.

N N. the fore hatch-way.

O O, the after hatch-way.

P, the drum-head of the gear capſtern.

P p, the drum-head of the main capſtern.

Q, the wing-tranſom-knee.

R, one of the breaſt-hooks under the gun-deck.

S, the breaſt-hook of the gun-deck.

T T, the ſtation of the chain-pumps.

V, the breadth and thickneſs of the timbers at the heighth of the gun-deck.

U U, ſcuttles leading to the gunner's ſtore-room, and bread-room.

W, the ſtation of the fore-maſt.

X. the ſtation of the main-maſt.

Y, the ſtation of the mizen-maſt.

Z, the ring-bolts of the decks, uſed to retain the cannon whilſt charging.

a, a, the ring-bolts of the ſides, whereon the tackles are hooked that ſecure the cannon at ſea.

c a a d, the water-ways, through which the ſcupper-holes are pierced, to carry the water off from the deck into the ſea.

b, b, plan of the foremoſt and aftmoſt cable-bits, with their croſs-pieces g, g, and their ſtandards e, e.

Thus we have repreſented, on one ſide, all the pieces which ſuſtain the deck with it's cannon; and, on the other ſide, the deck itſelf, with a tier of 32 pounders planted in battery thereon. In order alſo to ſhew the uſe of the breeching and train-tackle, one of the guns is drawn in as ready for charging. See the articles BREECHING and CANNON.

The number of beams, by which the decks of ſhips are ſupported, is often very different, according to the practice of different countries; the ſtrength of the timber of which the beams are framed; and the ſervices for which the ſhip is calculated.

As the deck which contains the train of a fire-ſhip is furniſhed with an equipage peculiar to itſelf, the whole apparatus is particularly deſcribed in the article FIRE-SHIP.

Fluſh-DECK, or DECK-*Fluſh fore and aft*, implies a continued floor laid from ſtem to ſtern, upon one line, without any ſtops or intervals.

Half-DECK, (*corps de garde*, Fr.) a ſpace under the quarter-deck of a ſhip of war, contained between the foremoſt bulk-head of the *ſteerage*, and the fore-part of the quarter-deck.

In

In the colliers of Northumberland the ſteerage itſelf is called the half-deck, and is uſually the habitation of the ſhip's crew.

DECOY, a ſtratagem employed by a ſmall ſhip of war to betray a veſſel of inferior force into an incautious purſuit, till ſhe has drawn her within the range of her cannon, or what is called within gun-ſhot.

It is uſually performed by painting the ſtern and ſides in ſuch a manner as to diſguiſe the ſhip, and repreſent her either much ſmaller, and of inferior force, or as a friend to the hoſtile veſſel, which ſhe endeavours to enſnare, by aſſuming the emblems and ornaments of the nation to which the ſtranger is ſuppoſed to belong. When ſhe has thus provoked the adverſary to chaſe, in hopes of acquiring a prize, ſhe continues the decoy by ſpreading a great ſail, as endeavouring to eſcape, at the ſame time that her courſe is conſiderably retarded by an artful alteration of her *trim* till the enemy approaches.

Decoying is alſo performed to elude the chace of a ſhip of ſuperior force in a dark night, by throwing out a lighted caſk of pitch into the ſea, which will burn for a conſiderable time, and miſguide the enemy. Immediately after the caſk is thrown out the ſhip changes her courſe, and may eaſily eſcape if at any tolerable diſtance from the foe.

DEEP-WAISTED, (*encaſtillé*, Fr.) the diſtinguiſhing fabric of a ſhip's decks, when the quarter-deck and fore-caſtle are elevated from four to ſix feet above the level of the upper-deck, ſo as to leave a vacant ſpace, called the waiſt, on the middle of the upper-deck. See the article WAIST.

DEMURRAGE, an allowance given to the commander of a trading ſhip by the merchants, for having detained him longer in port than the time previouſly appointed for his departure.

DEPARTURE, in navigation, the diſtance between any two places lying on the ſame parallel, counted in miles of the equator; or the diſtance of one place from the meridian of another, counted on the parallel paſſing over that place. See NAVIGATION.

DEPTH *of a ſail*, (*chute*, Fr.) the extent of any ſquare or oblong ſail from the head-rope to the foot-rope; or the length of the after-leech of any boom-ſail or ſtay-ſail. See the article SAIL.

DETACHMENT *of a fleet or ſquadron*, a certain number of ſhips choſen by an admiral or commodore from the reſt of the fleet, charged to execute ſome particular ſervice.

DIFFERENCE *of latitude*, in navigation, the difference between any two places lying on the ſame meridian; or the diſtance between the parallels of latitude of any two places, expreſſed in miles of the equator.

DINNAGE. See the article DUNNAGE.

DISABLED, (*deſemparé*, Fr.) the ſtate of a ſhip when, by the loſs of her maſts, ſails, yards, or rigging; by ſpringing a leak, or receiving ſome fracture in her hull, or other diſaſter; ſhe is rendered incapable of proſecuting her voyage without great difficulty and danger.

To DISCHARGE, (*decharger*, Fr.) when applied to a ſhip, ſignifies to unlade her, or take out her ſtores, ammunition, artillery, &c. When

expreſſed of the officers, or crew, it implies to diſband them from immediate ſervice.

DISMASTED, *(dematé*, Fr.) the ſtate of a ſhip which has loſt her maſts by boiſterous weather, engagement, or other misfortune.

DIVISION, a ſelect number of ſhips in a fleet or ſquadron of men of war, diſtinguiſhed by a particular flag or pendent, and uſually commanded by a general officer. A ſquadron is commonly ranged into three diviſions, the commanding officer of which is always ſtationed in the center.

When a fleet conſiſts of ſixty ſail of the *line*, that is, of ſhips having at leaſt ſixty cannon each, the admiral divides it into three ſquadrons, each of which has it's diviſions and commanding officers. Each ſquadron has it's proper colours, according to the rank of the admiral who commands it, and every diviſion it's proper maſt. Thus, the white flag denotes the firſt ſquadron of France; the white and blue the ſecond, and the third is characteriſed by the blue. In England, the firſt admiral, or the admiral of the fleet, diſplays the union flag at the main-top-maſt-head; next follows the white flag with St. George's-croſs; and afterwards the blue. The private ſhips carry pendents of the ſame colour with their reſpective ſquadron, at the maſts of their particular diviſions; ſo that the laſt ſhip in the diviſion of the blue ſquadron carries a blue pendent at her mizen-top-maſt-head.

DOCK, *(forme*, Fr. imagined of δοχεῖον) a ſort of broad and deep trench, formed on the ſide of a harbour, or on the banks of a river; and commodiouſly fitted either to build ſhips, or receive them to be repaired and *breamed* therein. Theſe ſorts of docks have generally ſtrong flood-gates, to prevent the flux of the tide from entering the dock while the ſhip is under repair.

There are likewiſe docks of another kind, called wet-docks, where a ſhip can only be cleaned during the receſs of the tide, or in the interval between the time when the tide left her dry a-ground, and the period when it again reaches her by the return of the flood. Docks of the latter kind are not furniſhed with the uſual flood-gates.

DOCKING *a ſhip*, the act of drawing her into the dock, in order to give her a proper repair, and cleanſe the bottom, and cover it anew with a preparation of ſtuff, as explained in the article BREAMING.

DOCK-YARDS, *(arceneaux*, Fr.) certain magazines containing all ſorts of naval ſtores, and timber for ſhip-building. In England, the royal dock-yards are at Chatham, Portſmouth, Plymouth, Deptford, Woolwich, and Sheerneſs. His Majeſty's ſhips and veſſels of war are generally moored at theſe ports, during the time of peace; and ſuch as want repairing are taken into the docks, examined, and refitted for ſervice. See the article REPAIR.

The principal dock-yards are governed by a commiſſioner, reſident at the port, who ſuperintends all the muſters of the officers, artificers, and labourers, employed in the dock-yard, and ordinary. He alſo controls their payment therein; examines the accounts; contracts, and draws bills on the Navy-office to ſupply the deficiency of ſtores; and, finally, regu-

lates

lates whatever belongs to the dock-yard, maintaining due order in the reſpective offices.

Theſe yards are generally ſupplied from the northern crowns with hemp, pitch, tar, roſin, canvas, oak plank, and ſeveral other ſpecies of ſtores. With regard to the maſts, particularly thoſe of the largeſt ſize, they are uſually imported from New-England.

DOG, a ſort of iron hook, or bar, with a ſharp fang at one end, ſo formed as to be eaſily driven into a plank: it is uſed to drag along the planks of oak when they are let into a hole under the ſtern of a ſhip, to be ſtowed in the *hold*. For this purpoſe there is a rope faſtened to the end of the dog, upon which ſeveral men pull, to draw the plank towards the place where it is to be ſtowed. It is alſo uſed for the ſame purpoſe in unlading the ſhip.

DOGGER, (*dogre-boat*, Dut.) a Dutch fiſhing-veſſel navigated in the German ocean. It is generally employed in the herring-fiſhery, being equipped with two maſts, viz. a main-maſt and a mizen-maſt, and ſomewhat reſembling a *ketch*.

DOLPHIN *of the maſt*, a peculiar kind of wreath, formed of plaited cordage, to be faſtened occaſionally round the maſts, as a ſupport to the *puddening*, whoſe uſe is to ſuſtain the weight of the fore and main-yards, in caſe the rigging, or chains, by which thoſe yards are ſuſpended, ſhould be ſhot away in the time of battle; a circumſtance which might render their ſails uſeleſs at a ſeaſon when their aſſiſtance is extremely neceſſary. See the article PUDDENING.

DOUBLE-BANKED, the ſituation of the oars of a boat when two oppoſite ones are managed by *rowers* ſeated on the ſame bench, or *thwart*. The oars are alſo ſaid to be double-banked when two men row upon every ſingle one.

DOUBLING, (*doubler*, Fr.) in navigation, the act of ſailing round, or paſſing beyond a cape or promontory, ſo as that the cape or point of land ſeparates the ſhip from her former ſituation, or lies between her and any diſtant obſerver.

DOUBLING-NAILS, amongſt ſhipwrights, the nails commonly uſed to faſten the lining of the gun-ports, &c.

DOUBLING-UPON, in a naval engagement, the act of encloſing any part of a hoſtile fleet between two fires, or of cannonading it on both ſides.

It is uſually performed by the van or rear of that fleet which is ſuperior in number, taking the advantage of the wind, or of it's ſituation and circumſtances, and tacking or veering round the van or rear of the enemy, who will thereby be expoſed to great danger, and can ſcarcely avoid being thrown into a general confuſion.

DOWN, (*dune*, Fr.) heighths on the ſea-coaſt.

DOWN-HAUL, (*calebas*, Fr.) a rope paſſing up along a ſtay through the rings of the ſtay-ſail, and tied to the upper-corner of the ſail, to pull it down, when they are *ſhortening* ſail.

DOWN-HAUL-TACKLE, a complication of pullies employed to pull down the main or fore-yard in a tempeſt, in order to reef the ſail. It is uſed at this time, becauſe the violence of the wind prevents the weight of the yard from having it's natural effect, of deſcending, when the ropes by which it is ſuſpended are ſlackened.

To DOWSE, *(molir*, Fr.) to lower ſuddenly or ſlacken: expreſſed of a ſail in a ſquall of wind, an extended hawſer, &c.

DRABLER, an additional part of a ſail, ſometimes laced to the bottom of the *bonnet* of a *ſquare-ſail*, in ſloops and ſchooners.

DRAG, *(drague*, Fr.) a machine conſiſting of a ſharp ſquare iron ring encircled with a net, and commonly uſed to rake the mud off from the platform or bottom of the docks, or to clean rivers. See plate II. fig. 35.

DRAGGING *the anchor*, the act of trailing it along the bottom, after it is looſened from the ground, by the effort of the wind or current upon the ſhip, communicated to the cable. See the article ANCHOR.

DRAUGHT, the depth of a body of water neceſſary to float a ſhip; hence a ſhip is ſaid to draw ſo many feet of water, when ſhe is borne up by a column of water of that particular depth. Thus, if it requires a body of water, whoſe depth is equal to twelve feet, to float or buoy up a ſhip on it's ſurface, ſhe is ſaid to draw twelve feet water; and that this draught may be more readily known, the feet are marked on the ſtem and ſtern-poſt, regularly from the keel upwards.

DRAWING, the ſtate of a ſail when it is inflated by the wind, ſo as to advance the veſſel in her courſe.

DRESSING, *(faire la parade*, Fr.) the act of ornamenting a ſhip with a variety of colours; as enſigns, flags, pendents, &c. diſplayed from different parts of her maſts and rigging on a day of feſtivity.

DRIFT, *(derive*, Fr. from *drive)* in navigation, the angle which the line of a ſhip's motion makes with the neareſt meridian, when ſhe drives with her ſide to the wind and waves, and is not governed by the power of the helm: it alſo implies the diſtance which the ſhip drives on that line.

A ſhip's way is only called drift in a ſtorm; and then, when it blows ſo vehemently, as to prevent her from carrying any ſail, or at leaſt reſtrains her to ſuch a portion of ſail as may be neceſſary to keep her ſufficiently inclined to one ſide, that ſhe may not be diſmaſted by her violent labouring, produced by the turbulence of the ſea.

DRIVER, an oblong ſail, occaſionally hoiſted to the mizen-peak, when the wind is very fair. The lower corners of it are extended by a *boom* or pole, which is thruſt out acroſs the ſhip, and projects over the lee-quarter.

DRIVING, *(abattre*, Fr. *drifan*, Sax.) the ſtate of being carried at random along the ſurface of the water, as impelled by a ſtorm, or impetuous current: it is generally expreſſed of a ſhip when, accidentally, broke looſe from her anchors or moorings.

DROP, *(etarcure*, Fr.) a name ſometimes given to the depth of the principal ſails; as, her main-top-ſail *drops* ſeventeen yards.

DUCKING,

DUCKING. (*bâptême*, Fr.) a ſort of marine puniſhment inflicted by the French on thoſe who have been convicted of deſertion, blaſphemy, or exciting ſedition. It is performed as follows: the criminal is placed aſtride of a ſhort thick batten, faſtened to the end of a rope, which paſſes through a block hanging at one of the yard-arms. Thus fixed, he is hoiſted ſuddenly up to the yard, and the rope being ſlackened at once, he is plunged into the ſea. This chaſtiſement is repeated ſeveral times, conformable to the purport of the ſentence pronounced againſt the culprit, who has at that time ſeveral cannon-ſhot faſtened to his feet during the puniſhment, which is rendered public by the firing of a gun, to advertiſe the other ſhips of the fleet thereof, that their crews may become ſpectators. *Aubin.*

DUCKING, is alſo a penalty which veteran ſailors pretend to inflict on thoſe, who, for the firſt time, paſs the tropic of Cancer, the Equator, or the ſtreights of Gibraltar, in conſequence of their refuſal or incapacity to pay the uſual fine levied on this occaſion, which would redeem them from the ſaid penalty.

DUNNAGE, (*fardage*, Fr.) a quantity of faggots, boughs of trees, or other looſe wood, laid in the bottom of a ſhip, either to raiſe the heavy goods which might make her too ſtiff, or to keep the cargo ſufficiently above the bottom, that it may ſuſtain no damage from the water, if the ſhip ſhould prove leaky.

E.

EARINGS, (*rabans*, Fr.) certain ſmall cords employed to faſten the upper corners of a ſail to it's reſpective yard; for which purpoſe one end of the earing is ſpliced to the *cringle*, fixed in that part of the ſail; and the other end of it is paſſed ſix or ſeven times round the yard-arm and through the cringle, thereby faſtening the latter to the former. Two of the turns are intended to ſtretch the upper-edge of the ſail tight along the yard; and the reſt to draw it cloſe up to it. The former are therefore called *outer*, and the latter *inner* turns, as being paſſed without, or within the rigging, on the yard-arms.

EASE *the ſhip!* the command given by the pilot to the ſteerſman, to put the helm cloſe to the lee-ſide, or, in the ſea-phraſe, *hard-a-lee*, when the ſhip is expected to *pitch* or plunge her fore-part deep in the water, while cloſe-hauled. The reaſon uſually given for this practice is, that the ſudden movement of the helm prevents the ſhip's head from falling with ſo much weight and rapidity into the hollow of the ſea, as it would do otherwiſe: which is preſuming that the ſlow and uncertain effect of the helm is ſufficient to retard the certain and violent action of gravity: a poſition that neceſſarily infers a very ſingular theory of mechanics. We ſhall not endeavour to advance any argument in favour of this practice; only to remark, that it is moſt religiouſly obſerved, both in merchant-ſhips and his Majeſty's navy.

To EASE *off*, or EASE *away*, (*molir*, *filer*, Fr.) to ſlacken gradually any ſingle rope, or complication of ropes, formed into a tackle.

EBB, (*juſſant*, Fr.) the reflux of the tide, or the return of it into the ſea after the higheſt of the flood, uſually termed full ſea, or high-water.

EDDY, (*remoux*, Fr. *ed*, backward, again, and *ea*, water, Sax.) the water that, by ſome interruption in it's courſe, runs contrary to the direction of any river, or current, and appears like the motion of a whirlpool.

To EDGE *away*, (*abbattre*, Fr.) in navigation, to decline gradually from the ſhore, or from the line of the courſe which the ſhip formerly ſteered: it is particularly applied when a ſhip changes her courſe, by ſailing nearer the direction of the wind; or, in the ſea-language, by ſailing *larger*, or more *afore* the wind, than ſhe had done before that operation.

ELBOW *in the hawſe*, a particular twiſt in the cables by which a ſhip rides at anchor. In this ſituation each of the cables, after croſſing the other before the ſtem, is directed outwards on the ſame *bow* from which

it

it iſſued: that is to ſay, the ſtarboard cable *grows* out on the ſtarboard bow, and the larboard cable on the larboard bow, as exhibited in fig. 36. plate II. where a expreſſes the fore-caſtle, b the ſtem, c c the larboard cable, and d d the ſtarboard one. See the article HAWSE.

EMBARGO, (*arret*, Fr. *embargar*, Span.) in commerce, an arreſt laid on ſhips or merchandiſe by public authority, or a prohibition of ſtate, commonly iſſued on foreign ſhips, to prevent their putting to ſea in time of war; and ſometimes to prevent their coming in, and otherwiſe both to prevent their entrance and departure.

EMBAYED, from *bay*, (*encapé*, Fr.) the ſituation of a ſhip when ſhe is incloſed between two capes or promontories. It is particularly applied when the wind, by blowing ſtrongly into any bay or gulf, makes it extremely difficult, and perhaps impracticable for the veſſel, thus encloſed, to *claw* off from the ſhore, ſo as to weather the capes and gain the offing.

ENGAGEMENT, in a naval ſenſe, implies a particular or general battle at ſea; or an action of hoſtility between ſingle ſhips, or *detachments*, or *ſquadrons* of ſhips of war.

In order to have a clearer idea of this article, it will, therefore, be neceſſary that the reader who is little acquainted with the ſubject, ſhould previouſly refer to the explanation of thoſe terms, as alſo to the articles CANNON, DIVISION, EXERCISE, FLEET, and LINE *of* BATTLE.

The ſea-fights of the ancients were uſually carried on in two different manners. Advanced by the force of their oars, the gallies ran violently *aboard* of each other, and by the mutual encounter of their beaks and prows, and ſometimes of their ſterns, endeavoured to daſh in pieces, or ſink their enemies.

The prow, for this purpoſe, was commonly armed with a brazen point or trident, nearly as low as the ſurface of the ſea, in order to pierce the enemy's ſhips under the water. Some of the gallies were furniſhed with large turrets, and other acceſſions of building, either for attack or defence. The ſoldiers alſo annoyed their enemies with darts and ſlings, and, on their nearer approach, with ſwords and javelins; and, in order that their miſſive weapons might be directed with greater force and certainty, the ſhips were equipped with ſeveral platforms, or elevations above the level of the deck *. The ſides of the ſhip were fortified with a thick fence of hides, which ſerved to repel the darts of their adverſaries, and to cover their own ſoldiers, who thereby annoyed the enemy with greater ſecurity.

As the invention of gun-powder has rendered uſeleſs many of the machines employed in the naval wars of the ancients, the great diſtance of time has alſo conſigned many of them to oblivion: ſome few are, nevertheleſs, recorded in ancient authors, of which we ſhall endeavour to preſent a ſhort deſcription. And firſt,

The Δελφιν was a large and maſſy piece of lead, or iron, caſt in the form of a dolphin. This machine being ſuſpended by blocks at their maſt heads

* Lucan.

or yard-arms, ready for a proper occaſion, was let down violently from thence into the adverſe ſhips, and either penetrated through their bottom, and opened a paſſage for the entering waters, or by its weight immediately ſunk the veſſel.

The Δρέπανον was an engine of iron crooked like a ſickle, and fixed on the top of a long pole. It was employed to cut aſunder the *ſlings* of the ſail-yards, and, thereby letting the ſails fall down, to diſable the veſſel from eſcaping, and incommode her greatly during the action. Similar to this was another inſtrument, armed at the head with a broad two-edged blade of iron, wherewith they uſually cut away the ropes that faſtened the rudder to the veſſel *.

Δόρατα ναύμαχα, a ſort of ſpears or maces of an extraordinary length, ſometimes exceeding twenty cubits, as appears by the fifteenth Iliad of Homer †, by whom they are alſo called μάχραι.

Κεραῖαι were certain machines uſed to throw large ſtones into the enemies ſhips.

Vegetius mentions another engine, which was ſuſpended to the main-maſt, and reſembled a battering-ram; for it conſiſted of a long beam, and an head of iron, and was, with great violence, puſhed againſt the ſides of the enemies galleys.

They had alſo a grappling-iron, which was uſually thrown into the adverſe ſhip by means of an engine; this inſtrument facilitated the entrance of the ſoldiers appointed to *board*, which was done by means of wooden bridges, that were generally kept ready for this purpoſe in the fore-part of the veſſel ‡.

The arms uſed by the ancients rendered the diſpoſition of their fleets very different, according to the time, place and circumſtances. They generally conſidered it an advantage to be to windward, and to have the ſun ſhining directly on the front of their enemy. The order of battle chiefly depended on their power of managing the ſhips, or of drawing them readily into form; and on the ſchemes which their officers had concerted. The fleet being compoſed of rowing veſſels, they lowered their ſails previous to the action; they preſented their prows to the enemy, and advanced againſt each other by the force of their oars ‖. Before they joined battle, the admirals went from ſhip to ſhip, and exhorted their ſoldiers to behave gallantly. All things being in readineſs, the ſignal was diſplayed by hanging out of the admiral's galley a gilded ſhield, or a red garment or banner. During the elevation of this the action continued, and by it's depreſſion, or inclination towards the right or left, the reſt of the ſhips were directed how to attack, or retreat from their enemies. To this was added the ſound of trumpets, which began in the admiral's galley, and continued round the whole navy. The fight was alſo begun by the admiral's galley, by grappling, boarding, and

* Vegetius.

† A ponderous mace, with ſtuds of iron crown'd,
Full twenty cubits long he ſwings around. POPE.

‡ See the note on the following page.

‖ Potter's Archæologia Græca. De Morogues Tactique Navale.

endeavouring to overſet, ſink, or deſtroy the adverſary, as we have above deſcribed *. Sometimes, for want of grappling-irons, they fixed their oars in ſuch a manner as to hinder the enemy from retreating †. If they could not manage their oars asd exterouſly as their antagoniſts, or fall along-ſide

* *Ut primum roſtris crepuerunt obvia roſtra,*
In puppim rediere rates, emiſſaque tela
Aera texerunt, vacuumque cadentia pontum. LUCAN.

Which we may thus tranſlate:

The beaks encounter with a thundering ſound,
Then reeling, from the mutual ſhock rebound.
The javelins fly! an iron tempeſt ſweeps
The darken'd air, and covers all the deeps!

† *Seque tenent remis, toto ſtetit æquore bellum.*
Jam non excuſſis torquentur tela lacertis,
Nec longinqua cadunt jaculato vulnera ferro;
Miſcenturque manus, navali plurima bello
Enſis agit; ſtat quiſque ſuo de robore puppis
Pronus in adverſos ictus.—— LUCAN.

Thus tranſlated by ROWE:

——Others by the tangling oars are held.
The ſeas are hid beneath the cloſing war,
Nor need they caſt their javelins now from far;
With hardy ſtrokes the combatants engage,
And with keen faulchions deal their deadly rage:
Man againſt man, and board by board, they lie.

"The famous machine called the Corvus, was framed after the following manner: They erected on the prow of their veſſels a round piece of timber, of about a foot and a half diameter, and about twelve feet long; on the top whereof they had a block or pulley. Round this piece of timber, they laid a ſtage or platform of boards, four feet broad, and about eighteen feet long, which was well framed, and faſtened with iron. The entrance was long-ways, and it moved about the aforeſaid upright piece of timber, as on a ſpindle, and could be hoiſted up within ſix feet of the top: about this was a ſort of a parapet, knee high, which was defended with upright bars of iron, ſharpen'd at the end; towards the top whereof there was a ring: through this ring, faſtening a rope, by the help of the pulley, they hoiſted or lowered the engine at pleaſure; and ſo with it attacked the enemy's veſſels, ſometimes on their bow, and ſometimes on their broad-ſide, as occaſion beſt ſerved. When they had grappled the enemy with thoſe iron ſpikes, if they happen'd to ſwing broad-ſide to broad-ſide, then they entered from all parts; but in caſe they attacked them on the bow, they entered two and two by the help of this machine, the foremoſt defending the fore-part, and thoſe that followed the flanks, keeping the boſs of their bucklers level with the top of the parapet.

"To this purpoſe Polybius gives us an account of the firſt warlike preparations which the Romans made by ſea. We may add, in ſhort, the order, which they obſerved in drawing up their fleet for battle, taken from the ſame author. The two Conſuls were in the two admiral gallies, in the front of their two diſtinct ſquadrons, each of them juſt a-head of their own diviſions, and abreaſt of each other; the firſt diviſion being poſted on the right, the ſecond on the left, making two long files or lines of battle. And, whereas it was neceſſary to give a due ſpace between each galley, to ply their oars, and keep clear one of another, and to have their heads or prows looking ſomewhat outwards; this manner of drawing up did therefore naturally form an angle, the point whereof was at the two admiral gallies, which were near together; and as their two lines were prolonged, ſo the diſtance grew conſequently wider and wider towards the rear. But, becauſe the naval as well as the land army conſiſted of four legions, and accordingly the ſhips made four diviſions, two of theſe were yet behind: Of which the third fleet, or the third legion, was drawn up front-

ſo as to board him, they penetrated his veſſel with the brazen prow. The veſſels approached each other as well as their circumſtances would permit, and the ſoldiers were obliged to fight hand to hand, till the battle was decided: nor indeed could they fight otherwiſe with any certainty, ſince the ſhorteſt diſtance rendered their ſlings and arrows, and almoſt all their offenſive weapons, ineffectual, if not uſeleſs. The ſquadrons were ſometimes ranged in two or three right lines, parallel to each other; being ſeldom drawn up in one line, unleſs when formed into an half moon. This order indeed appears to be the moſt convenient for rowing veſſels, that engage by advancing with their prows towards the enemy. At the battle of Ecnomus, between the Romans and the Carthaginians, the fleet of the former was ranged into a triangle, or a ſort of wedge in front, and towards the middle of it's depth, of two right parallel lines. That of the latter was formed into a rectangle, or two ſides of a ſquare, of which one branch extended behind, and, as the opening of the other proſecuted the attack was ready to fall upon the flank of ſuch of the Roman gallies as ſhould attempt to break their line. Ancient hiſtory has preſerved many of theſe orders, of which ſome have been followed in later times. Thus in a battle in A. D. 1340, the Engliſh fleet was formed in two lines, the firſt of which contained the larger ſhips, the ſecond conſiſted of all the ſmaller veſſels, uſed as a reſerve to ſupport the former whenever neceſſary. In 1545 the French fleet under the command of the Mareſchal d'Annebault, in an engagement with the Engliſh in the Channel, was arranged in the form of a creſcent. The whole of it was divided into three bodies, the center being compoſed of thirty-ſix ſhips, and each of the wings of thirty. He had alſo many gallies; but theſe fell not into the line, being deſigned to attack the enemy occaſionally. This laſt diſpoſition was continued down to the reigns of James I. and Louis XIII *.

Meanwhile the invention of gunpowder, in 1330, gradually introduced the uſe of fire-arms into naval war, without finally ſuperſeding the ancient method of engagement. The Spaniards were armed with cannon in a ſea-fight againſt the Engliſh and the people of Poitou abreaſt of Rochelle in 1372; and this battle is the firſt wherein mention is made of artillery in our navies. Many years elapſed before the marine armaments were ſufficiently provided with fire-arms †. So great a revolution in the manner of fighting,

ways in the rear of the firſt and ſecond, and ſo ſtretching along from point to point compoſed a triangle, whereof the third line was the baſe. Their veſſels of burden, that carried their horſes and baggage, were in the rear of theſe; and were, by the help of ſmall boats provided for that purpoſe, towed or drawn after them. In the rear of all was the fourth fleet, called the Triarians, drawn up likewiſe in rank or front-ways, parallel to the third: but theſe made a longer line, by which means the extremities ſtretched out, and extended beyond the two angles at the baſe. The ſeveral diviſions of the army, being thus diſpoſed, formed, as is ſaid, a triangle; the area within was void, but the baſe was thick and ſolid, and the whole body quick, active, and very difficult to be broken." *Kennett Antiq. Rome.*

* De Morogues Tact. Navale,

† "The uſe of powder in battle was not eſtabliſhed till the long wars of Francis I. and Charles V. From it's invention to this period, both the machines in uſe before that diſcovery, and thoſe which that diſcovery introduced, were uſed in war at the ſame time; and even ſome time after this period, both ſorts of machines were continued in uſe." *Le Blond's Elements of War.*

and

and which neceſſarily introduced a total change in the conſtruction of ſhips, could not be ſuddenly effected. In ſhort, the ſquadrons of men of war are no longer formed of rowing-veſſels, or compoſed of gallies and ſhips of the line, but intirely of the latter, which engage under ſail, and diſcharge the whole force of their artillery from their ſides. Accordingly they are now diſpoſed in no other form than that of a right line parallel to the enemy; every ſhip keeping *cloſe-hauled* upon a wind on the ſame tack. Indeed the difference between the force and manner of fighting of ſhips and gallies rendered their ſervice in the ſame line incompatible. When we conſider therefore the change introduced, both in the conſtruction and working of ſhips, occaſioned by the uſe of cannon, it neceſſarily follows, that ſquadrons of men of war muſt appear in the order that is now generally adopted. Finally, the ſhips ought to preſent their broad ſides to the enemy; and to ſail cloſe upon a wind in the wake of each other; as well to retain their own uniformity, as to preſerve or acquire the advantage which the weather-gage gives them over their adverſary *.

The machines which owe their riſe to the invention of gun-powder have now totally ſupplanted the others; ſo that there is ſcarce any but the ſword remaining, of all the weapons uſed by the ancients. Our naval battles are therefore almoſt always decided by fire-arms, of which there are ſeveral kinds, known by the general name of artillery.

In a ſhip of war fire-arms are diſtinguiſhed into cannon mounted on carriages, ſwivel-cannon, grenadoes, and muſquetry. The firſt has been already deſcribed at large in it's proper place. The ſecond is a ſmall piece of artillery, carrying a ſhot of half a pound, and fixed in a ſocket on the top of the ſhip's ſide, ſtern, or bow, and alſo in her tops. The trunnions of this piece are contained in a ſort of iron crotch, whoſe lower-end terminates in a cylindrical pivot reſting in the ſocket, ſo as to ſupport the weight of the cannon. The ſocket is bored in a ſtrong piece of oak, reinforced with iron hoops, in order to enable it to ſuſtain the recoil. By means of this frame, which is called the ſwivel, and an iron handle on it's caſcabel, the gun may be directed by hand to any object. It is therefore very neceſſary in the tops, particularly when loaded with muſket-balls, to fire down on the upper-decks of the adverſary in action.—The Grenadoe is a kind of little ſhell of the ſame diameter as a four-pound bullet; it weighs about two pounds, being charged with four or five ounces of powder.—Grenadoes are thrown from the tops by the hands of the ſeamen. They have a touch-hole in the ſame manner as a ſhell, and a fuſee of the ſame compoſition. See MORTAR. The ſailor fires the fuſe with a match, and throws the grenadoe as he is directed: the powder being inflamed, the ſhell inſtantly burſts into ſplinters, that kill or maim whomſoever they reach on the decks of the enemy. As this machine cannot be thrown by hand above fifteen or ſixteen fathoms, the ſhip muſt be pretty near, to render it uſeful in battle.—The muſket or firelock is ſo well known, that it appears unneceſſary to deſcribe it in this place.—Beſides theſe machines,

* De Morogues Tact. Navale.

there

there are ſeveral others uſed in merchant-ſhips and privateers, as cochorns, carabines, fire-arrows, organs, powder-flaſks, ſtink-pots, &c. *

Since a general engagement of fleets or ſquadrons of ſhips of war is nothing elſe than a variety of particular actions of ſingle ſhips with each other, in a line of battle; it appears neceſſary, according to the plan of this work, to begin by deſcribing the latter, and then proceed to repreſent the uſual manner of conducting the former.

The whole œconomy of a naval engagement may be arranged under the following heads, viz. the preparation; the action; and the repair, or refitting for the purpoſes of navigation.

The preparation is begun by iſſuing an order to clear the ſhip for action, which is repeated by the boatſwain and his mates at all the *hatchways*, or ſtair-caſes, leading to the different batteries. As the management of the artillery in a veſſel of war requires a conſiderable number of men, it is evident that the officers and ſailors muſt be reſtrained to a narrow ſpace in their uſual habitations in order to preſerve the internal regularity of the ſhip. Hence the *hammocs*, or hanging-beds, of the latter are crowded together as cloſe as poſſible between the decks, each of them being limited to the breadth of fourteen inches. They are hung parallel to each other, in rows ſtretching from one ſide of the ſhip to the other, nearly throughout her whole length, ſo as to admit of no paſſage but by ſtooping under them. As the cannon therefore cannot be worked while the hammocs are ſuſpended in this ſituation, it becomes neceſſary to remove them as quick as p oſſibl. By this circumſtance a double advantage is obtained: the batteries of cannon are immediately cleared of an incumbrance, and the hammocs are converted into a ſort of parapet, to prevent the execution of ſmall ſhot on the *quarter-deck*, *tops*, and *fore-caſtle*. At the ſummons of the boatſwain, *Up all hammocs!* every ſailor repairs to his own, and, having ſtowed his bedding properly, he cords it firmly with a *laſhing*, or line, provided for

* "The carabine is a ſort of muſquetoon, the barrel of which is rifled ſpirally from the breech, ſo that when the ball, which is forced into it, is again driven out by the ſtrength of the powder, it is lengthened about the breadth of a finger, and marked with the rifle of the bore. This piece has an iron rammer.

"The barrel of the carabine is three feet long, including the ſtock. It has a much greater *range* than the fuſil or muſket, becauſe the rifle of the barrel impedes the ball, which thereby makes the greater reſiſtance at the firſt inflammation of the powder, and giving time for the whole charge to take fire before it goes out of the bore, it is at length thrown out with greater force than from the common muſket." *Le Blond's Elements of War.*

The cochorn is a ſort of ſmall mortar, fixed on a ſwivel, and particularly uſed to diſcharge grenadoes, or caſt bullets from cloſe quarters in merchant veſſels when boarded.

The fire arrow, *dard à feu*, is a ſmall iron dart furniſhed with ſprings and bars, together with a match, impregnated with powder and ſulphur, which is wound about it's ſhaft. It is intended to fire the ſails of the enemy, and is for this purpoſe diſcharged from a muſquetoon or ſwivel gun. The match being kindled by the exploſion, communicates the flame to the ſail againſt which it is directed, where the arrow is faſtened by means of it's bars and ſprings. As this is peculiar to hot climates, particularly the Weſt Indies, the ſails, being extremely dry, are inſtantly inflamed, and of courſe convey the fire to the maſts and rigging, and finally to the veſſel itſelf.

The Powder-flaſk and ſtink-pot are deſcribed in the article BOARDING: and the organ is no other than a machine conſiſting of ſix or ſeven muſket barrels fixed upon one ſtock, ſo as to be fired all at once.

that

that purpoſe. He then carries it to the quarter deck, poop, or forecaſtle, or wherever it may be neceſſary. As each ſide of the quarter-deck and poop is furniſhed with a double net-work, ſupported by iron cranes fixed immediately above the *gunnel*, or top of the ſhip's ſide, the hammocs thus corded are firmly ſtowed by the quarter-maſter between the two parts of the netting, ſo as to form an excellent barrier. The tops, waiſt, and forecaſtle are then fenced in the ſame manner.

Whilſt theſe offices are performed below, the boatſwain and his mates are employed in ſecuring the ſail-yards, to prevent them from tumbling down when the ſhip is canonaded, as ſhe might thereby be diſabled, and rendered incapable of attack, retreat, or purſuit. The yards are now likewiſe ſecured by ſtrong chains, or ropes, additional to thoſe by which they are uſually ſuſpended. The boatſwain alſo provides the neceſſary materials to repair the rigging, wherever it may be damaged by the ſhot of the enemy; and to ſupply whatever parts of it may be entirely deſtroyed. The carpenter and his crew in the mean-while prepare his ſhot-plugs and mauls, to cloſe up any dangerous breaches that may be made near the ſurface of the water; and provide the iron-work neceſſary to refit the chain-pumps, in caſe their machinery ſhould be wounded in the engagement. The gunner with his mates and quarter-gunners is buſied in examining the cannon of the different batteries, to ſee that their charges are thoroughly dry and fit for execution: to have every thing ready for furniſhing the great guns and ſmall arms with powder, as ſoon as the action begins: and to keep a ſufficient number of cartridges continually filled, to ſupply the place of thoſe expended in battle. The maſter and his mates are attentive to have the ſails properly trimmed, according to the ſituation of the ſhip; and to reduce or multiply them, as occaſion requires, with all poſſible expedition. The lieutenants viſit the different decks, to ſee that they are effectually cleared of all incumbrance, ſo that nothing may retard the execution of the artillery: and to enjoin the other officers to diligence and alertneſs, in making the neceſſary diſpoſitions for the expected engagement, ſo that every thing may be in readineſs at a moment's warning.

When the hoſtile ſhips have approached each other to a competent diſtance, the drums beat to arms. The boatſwain and his mates pipe, *all hands to quarters!* at every hatchway. All the perſons appointed to manage the great guns immediately repair to their reſpective ſtations. The crows, handſpecs, rammers, ſponges, powder-horns, matches and train tackles, are placed in order by the ſide of every cannon. The hatches are immediately laid, to prevent any one from deſerting his poſt by eſcaping into the lower apartments. The marines are drawn up in rank and file, on the quarter-deck, poop and fore-caſtle. The laſhings of the great guns are caſt looſe, and the tompions withdrawn. The whole artillery, above and below, is run out at the ports, and levelled to the point-blank range ready for firing.

The neceſſary preparations being completed, and the officers and crew ready at their reſpective ſtations, to obey the order, the commencement of the action is determined by the mutual diſtance and ſituation of the adverſe ſhips,

ſhips, or by the ſignal from the commander in chief of the fleet or ſquadron. The cannon being levelled in parallel rows, projecting from the ſhip's ſide, the moſt natural order of battle is evidently to range the ſhips abreaſt of each other, eſpecially if the engagement is general. The moſt convenient diſtance is properly within the point-blank range of a muſket, ſo that all the artillery may do effectual execution.

The combat uſually begins by a vigorous cannonade, accompanied with the whole efforts of the ſwivel-guns and the ſmall-arms. The method of firing in platoons, or vollies of cannon at once, appears inconvenient in the ſea-ſervice, and perhaps ſhould never be attempted, unleſs in the battering of a fortification. The ſides and decks of the ſhip, although ſufficiently ſtrong for all the purpoſes of war, would be too much ſhaken by ſo violent an exploſion and recoil. The general rule obſerved on this occaſion throughout the ſhip, is to load, fire, and ſponge, the guns with all poſſible expedition, yet without confuſion or precipitation. The captain of each gun is particularly enjoined to fire when the piece is properly directed to it's object, that the ſhot may not be fruitleſsly expended. The lieutenants, who command the different batteries, traverſe the deck to ſee that the battle is proſecuted with vivacity; and to exhort and animate the men to their duty. The midſhipmen ſecond theſe injunctions, and give the neceſſary aſſiſtance wherever it may be required, at the guns committed to their charge. The gunner ſhould be particularly attentive that all the artillery is ſufficiently ſupplied with powder, and that the cartridges are carefully conveyed along the decks in covered boxes. The havock produced by a continuation of this mutual aſſault may be readily conjectured by the reader's imagination: battering, penetrating, and ſplintering the ſides and decks; ſhattering or diſmounting the cannon; mangling and deſtroying the rigging; cutting aſunder, or carrying away the maſts and yards; piercing and tearing the ſails ſo as to render them uſeleſs; and wounding, diſabling, or killing the ſhip's company! The comparative vigour and reſolution of the aſſailants to effect theſe pernicious conſequences in each other, generally determine their ſucceſs or defeat: I ſay generally, becauſe the fate of the combat may ſometimes be decided by an unforeſeen incident, equally fortunate for the one and fatal to the other. The defeated ſhip having acknowledged the victory, by ſtriking her colours, is immediately taken poſſeſſion of by the conqueror, who ſecures her officers and crew as priſoners in his own ſhip; and inveſts his principal officer with the command of the prize until a captain is appointed by the commander in chief.

The engagement being concluded, they begin the repair: the cannon are ſecured by their breechings and tackles, with all convenient expedition. Whatever ſails have been rendered unſerviceable are unbent; and the wounded maſts and yards ſtruck upon the deck, and *fiſhed*, or replaced by others. The ſtanding rigging is *knotted*, and the running rigging ſpliced wherever neceſſary. Proper ſails are bent in the room of thoſe which have been diſplaced as uſeleſs. The carpenter and his crew are employed in repairing the breaches made in the ſhip's hull, by ſhot-plugs, pieces of plank, and ſheet lead. The gunner and his aſſiſtants are buſied in repleniſhing the

allotted number of charged cartridges, to ſupply the place of thoſe which have been expended, and in refitting whatever furniture of the cannon may have been damaged by the late action.

Such is the uſual proceſs and conſequences of an engagement between two ſhips of war, which may be conſidered as an epitome of a general battle between fleets or ſquadrons. The latter, however, involves a greater variety of incidents, and neceſſarily requires more comprehenſive ſkill and judgment in the commanding officer.

When the admiral, or commander in chief, of a naval armament has diſcovered an enemy's fleet, his principal concern is uſually to approach it, and endeavour to come to action as ſoon as poſſible. Every inferior conſideration muſt be ſacrificed to this important object; and every rule of action ſhould tend to haſten and prepare for ſo material an event. The ſtate of the wind, and the ſituation of his adverſary, will, in ſome meaſure, dictate the conduct neceſſary to be purſued with regard to the diſpoſition of his ſhips on this occaſion. To facilitate the execution of the admiral's orders, the whole fleet is ranged into three ſquadrons, each of which is claſſed into three diviſions, under the command of different officers. Before the action begins, the adverſe fleets are commonly drawn up in two lines, parallel to each other, and cloſehauled. We have endeavoured to explain the propriety and neceſſity of this diſpoſition in the article Line. As ſoon as the admiral diſplays the ſignal for the line of battle, the ſeveral diviſions ſeparate from the columns, in which they were diſpoſed in the uſual order of ſailing, and every ſhip crowds into it's ſtation in the *wake* of the next a-head: and a proper diſtance from each other, which is generally about fifty fathom, is regularly obſerved from the van to the rear. The admiral, however, will, occaſionally, contract or extend his line, ſo as to conform to the length of that of his adverſary, whoſe neglect, or inferior ſkill, on this occaſion, he will naturally convert to his own advantage; as well as to prevent his own line from being *doubled* upon, a circumſtance which might throw his van and rear into confuſion.

When the adverſe fleets approach each other, the *courſes* are commonly hauled up in the brails, and the top-gallant ſails and ſtay ſails furled. The movement of each ſhip is chiefly regulated by the main and fore-top ſails, and the jib; the mizen-top ſail being reſerved to haſten or retard the courſe of the ſhip, and, in fine, by *filling* or *backing*, *hoiſting* or *lowering* it, to determine her velocity.

The frigates, tenders, and fire-ſhips, being alſo hauled upon a wind, lie at ſome diſtance, ready to executue the admiral's orders, or thoſe of his ſeconds, leaving the line of battle between them and the enemy. If there are any tranſports and ſtore-ſhips attendant on the fleet, theſe are diſpoſed at a ſtill further diſtance from the ſcene of action. If the fleet is ſuperior in number to that of the enemy, the admiral uſually ſelects a body of reſerve from the different ſquadrons, which will always be of uſe to cover the fire-ſhips, bomb-veſſels, &c. and may fall into the line in any caſe of neceſſity: theſe alſo are ſtationed at a convenient diſtance from the line, and ſhould evidently be oppoſite to the weakeſt parts thereof.

And here it may not be improper to obſerve, with an ingenious French author *, that order and diſcipline give additional ſtrength and activity to a fleet. If thus a double advantage is acquired by every fleet, it is certainly more favourable to the inferior, which may thereby change it's diſpoſition with greater facility and diſpatch than one more numerous, yet without being ſeparated. When courage is equal to both, good order is then the only reſource of the ſmaller number. Hence we may infer that a ſmaller ſquadron of ſhips of war, whoſe officers are perfectly diſciplined in working their ſhips, may, by it's ſuperior dexterity, vanquiſh a more powerful one, even at the commencement of the fight; becauſe the latter being leſs expert in the order of battle, will, by it's ſeparation, ſuffer many of the ſhips to remain uſeleſs or not ſufficiently near to protect each other †.

The ſignal for a general engagement is uſually diſplayed when the oppoſite fleets are ſufficiently within the *range* of point-blank ſhot, ſo that they may level the artillery with certainty of execution, which is near enough for a line of battle. The action is begun and carried on throughout the fleet, in the manner we have already deſcribed between ſingle ſhips, at which time the admiral carries little ſail, obſerving, however, to regulate his own motions by thoſe of the enemy. The ſhips of the line mean while keep cloſe in their ſtations, none of which ſhould heſitate to advance in their order, although interrupted by the ſituation of ſome ſhips a-head, which has negligently fallen aſtern of her ſtation.

Such is now the practice of naval war, that the neceſſary order of battle, and the fabric of our ſhips, very ſeldom permit the aſſault of *boarding*, unleſs in ſingle actions. No captain ought therefore to abandon his ſtation in the line, under any pretence whatſoever, unleſs his ſhip is too much diſabled to continue the combat. The ſmall quantity of ſail carried on this occaſion will permit the bulk of the fleet, although ſomewhat impaired, to continue their cannonade a long time without quitting the line.

An ambition to diſtinguiſh himſelf ſhould never ſeduce any captain to break the line, in order to atchieve any diſtant enterprize, however the proſpect may flatter him with ſucceſs. He ought to wait the ſignal of the admiral, or his commanding officer; becauſe it is more eſſential to preſerve the regularity of a cloſe line, which conſtitutes the principal force of the fleet, than to proſecute a particular action, which, although brilliant in itſelf, has ſeldom any material conſequences, unleſs it's object is to ſeize a flag-ſhip, and even this can only be juſtified by ſucceſs ‡.

The various exigencies of the combat call forth the ſkill and reſources of the admiral, to keep his line as complete as poſſible, when it has been unequally attacked; by ordering ſhips from thoſe in reſerve, to ſupply the place of others which have ſuffered greatly by the action; by directing his

* M. De Morogues.

† The Gauls, ſays Vegetius, had the advantage of the Romans, in their numbers: the Germans have their ſtature; the Spaniards their ſtrength and numbers united; the Africans their artifice and opulence; the Greeks their policy and prudence; but the Romans have triumphed over all by their diſcipline.

‡ M. De Morogues.

fire-

fire-ſhips at a convenient time to fall aboard the enemy; by detaching ſhips from one part of the line or wing which is ſtronger, to another which is greatly preſſed by ſuperior force, and requires aſſiſtance. His vigilance is ever neceſſary to review the ſituation of the enemy from van to rear, every motion of whom he ſhould, if poſſible, anticipate and fruſtrate. He ſhould ſeize the favourable moments of occaſion, which are rapid in their progreſs, and never return. Far from being diſconcerted by any unforeſeen incident, he ſhould endeavour, if poſſible, to make it ſubſervient to his deſign. His experience and reflection will naturally furniſh him with every method of intelligence to diſcover the ſtate of his different ſquadrons and diviſions. Signals of enquiry and anſwers; of requeſt and aſſent; of command and obedience; will be diſplayed and repeated on this occaſion. Tenders and boats will alſo continually be detached between the admiral and the commanders of the ſeveral ſquadrons or diviſions.

As the danger preſſes on him, he ought to be fortified by reſolution and preſence of mind, becauſe the whole fleet is committed to his charge, and the conduct of his officers may, in a great degree, be influenced by his intrepidity and perſeverance. In ſhort, his renown or infamy may depend on the fate of the day.

If he conquers in battle, he ought to proſecute his victory as much as poſſible, by ſeizing, burning, or otherwiſe deſtroying the enemies ſhips. If he is defeated, he ſhould endeavour, by every reſource his experience can ſuggeſt, to ſave as many of his fleet as poſſible; by employing his tenders, &c. to take out the wounded and put freſh men in their places; by towing the diſabled ſhips to a competent diſtance, and by preventing the execution of the enemies fire-ſhips. In order to retreat with more ſecurity, he may judge it expedient to range his fleet into the form of an half-moon, placing himſelf in the centre. By this diſpoſition the enemy's ſhips which attempt to fall upon his rear, will at once expoſe themſelves to the fire of the admiral, and his ſeconds, in a diſadvantageous ſituation; a circumſtance which will ſerve to facilitate the eſcape of his own ſhips, and retard the purſuit of thoſe of his adverſary.

If his fleet is too much extended by this arrangement, the wings or quarters are eaſily cloſed, and the half-moon rendered more complete; in the midſt of which may be placed his ſtore-ſhips, tenders, &c. In flying, or retreating, the uncertainty of the weather is to be conſidered: it may become calm, or the wind may ſhift in his favour. His ſchemes may be aſſiſted by the approach of night, or the proximity of the land; and he ought rather to run the ſhips aſhore, if practicable, than ſuffer them to be taken afloat, and thereby transfer additional ſtrength to the enemy. In ſhort, nothing ſhould be neglected that may contribute to the preſervation of his fleet, or prevent any part of it from falling into the hands of the conqueror.

By what we have obſerved, the real force, or ſuperiority, of a fleet conſiſts leſs in the number of veſſels, and the vivacity of the action, than in good order, dexterity in working the ſhips, preſence of mind, and ſkilful conduct in the commanders.

ENSIGN, *(pavillon de pouppe, enſeigne,* Fr.) a large ſtandard, or banner, hoiſted on a long pole erected over the poop, and called the enſign-ſtaff.

The enſign is uſed to diſtinguiſh the ſhips of different nations from each other, as alſo to characteriſe the different ſquadrons of the navy.

The Britiſh enſign in ſhips of war is known by a double croſs, viz. that of St. George and St. Andrew, formed into an union, upon a field which is either red, white, or blue.

ENTERING Ropes, *(tire-veilles,* Fr.) two ropes hanging from the upper-part of a ſhip's ſide, on the right and left of the accommodation-ladder, or ſteps of the gangway. See Gangway.

ENTRANCE, a name frequently given to the foremoſt part of a ſhip under the ſurface of the ſea.

To EQUIP, *(equipper,* Fr.) a term borrowed from the French marine, and frequently applied to the buſineſs of fitting a ſhip for ſea, or arming her for war. See the article Fitting.

ESCUTCHEON, *(ecuſſon,* Fr.) a name ſometimes given to the compartment for the name, or arms, of the owner, or of the perſon whoſe title the veſſel aſſumes: it is uſually fixed on the middle of the ſhip's ſtern, and is more peculiar to the French and other foreigners, than to Engliſh built veſſels. See fig. 3, plate X.

EXCHANGE, *(bourſe,* Fr.) a place of reſort for merchants, mariners, &c. in a commercial ſea port.

EXERCISE is the preparatory practice of managing the artillery and ſmall-arms, in order to make the ſhip's crew perfectly ſkilled therein, ſo as to direct it's execution ſucceſsfully in the time of battle.

The exerciſe of the great guns has, till the late war, been very complicated, and abounding with ſuperfluities, in our navy, as well as all others. The following method was then ſucceſsfully introduced by an officer of diſtinguiſhed abilities.

Exercise *of the great guns.*

1ſt. Silence.
2d. Caſt looſe your guns.
3d. Level your guns.
4th. Take out your tompions.
5th. Run out your guns.
6th. Prime.
7th. Point your guns.
8th. Fire.
9th. Spunge your guns.
10th. Load with cartridge.
11th. Shot your guns.
12th. Put in your tompions.
13th. Houſe your guns.
14th. Secure your guns.

" Upon beating to arms* (every perſon having immediately repaired to his quarters) the midſhipman, commanding a number of guns, is to ſee that they are not without every neceſſary article, as (at every gun) a ſpunge, powder-horn, with it's priming wires, and a ſufficient quantity of

* As a number of technical terms are introduced in theſe inſtructions, the land-reader who wiſhes to underſtand the ſubject, ſhould refer to the ſeveral articles, all of which are inſerted in this work.

powder,

powder, ſhot, crow, handſpec, bed, quoin, train-tackle, &c. ſending, without delay, for a ſupply of any thing that may be miſſing; and, for the greater certainty of not overlooking any deficiency, he is to give ſtrict orders to each captain under him, to make the like examination at his reſpective gun, and to take care that every requiſite is in a ſerviceable condition, which he is to report accordingly. And (beſides the other advantages of this regulation, for the ſtill more certain and ſpeedy account being taken upon theſe occaſions, the midſhipman is to give each man his charge at quarters, as expreſſed in the form of the monthly report) who is to ſearch for his particular implements, and, not finding them, is immediately to acquaint his captain, that, upon his report to the midſhipman, they may be replaced.

" The man who takes care of the powder is to place himſelf on the oppoſite ſide of the deck from that where we engage, except when fighting both ſides at once, when he is to be amid-ſhips. He is not to ſuffer any other man to take a cartridge from him, but he who is appointed to ſerve the gun with that article, either in time of a real engagement, or at exerciſe.

" Lanthorns are not to be brought to quarters in the night, until the midſhipman gives his orders for ſo doing to the perſon he charges with that article. Every thing being in it's place, and not the leaſt lumber in the way of the guns, the exerciſe begins with,

1ſt. Silence.

At this word every one is to obſerve a ſilent attention to the officers.

2d. Caſt looſe your guns.

" The muzzle laſhing is to be taken off from the guns, and (being coiled up in a ſmall compaſs) is to be made faſt to the eye-bolt above the port. The laſhing-tackles at the ſame time to be caſt looſe, and the middle of the breeching ſeized to the thimble of the pomillion. The ſponge to be taken down, and, with the crow, handſpec, &c. laid upon the deck by the gun.

" N. B. When prepared for engaging an enemy, the ſeizing within the clinch of the breeching is to be cut, that the gun may come ſufficiently within-board for loading, and that the force of the recoil may be more ſpent before it acts upon the breeching.

3d. Level your guns.

" The breech of your metal is to be raiſed ſo as to admit the foot of the bed's being placed upon the axle-tree of the carriage, with the quoin upon the bed, both their ends being even one with the other.

" N. B. When levelled for firing, the bed is to be laſhed to the bolt which ſupports the inner end of it, that it may not be thrown out of it's

place

place by the violence of the gun's motion, when hot with frequent diſcharges. See fig. 17, plate VII.

4th. Take out your tompions.

" The tompion is to be taken out of the gun's mouth, and left hanging by it's laniard.

5th. Run out your guns.

" With the tackles hooked to the upper-bolts of the carriage, the gun is to be bowſed out as cloſe as poſſible, without the aſſiſtance of crows or handſpecs; taking care at the ſame time to keep the breeching clear of the trucks, by hawling it through the rings; it is then to be bent ſo as to run clear when the gun is fired. When the gun is out, the tackle-falls are to be laid along-ſide the carriages in neat fakes, that when the gun, by recoiling, overhauls them, they may not be ſubject to get foul, as they would if in a common coil.

6th. Prime.

" If the cartridge is to be pierced with the priming wire, and the vent filled with powder, the pan alſo is to be filled; and the flat ſpace, having a ſcore through it at the end of the pan, is to be covered, and this part of the priming is to be bruiſed with the round part of the horn. The apron is to be laid over, and the horn hung up out of danger from the flaſh of the priming.

7th. Point your guns.

" At this command the gun is, in the firſt place, to be elevated to the heighth of the object, by means of the ſide-ſights; and then the perſon pointing is to direct his fire by the upper-ſight, having a crow on one ſide and a handſpec on the other, to heave the gun by his direction till he catches the object.

" N. B. The men who heave the gun for pointing are to ſtand between the ſhip's ſide and their crows or handſpecs, to eſcape the injury they might otherwiſe receive from their being ſtruck againſt them, or ſplintered by a ſhot; and the man who attends the captain with a match is to bring it at the word, " Point your guns," and kneeling upon one knee oppoſite the train-truck of the carriage, and at ſuch a diſtance as to be able to touch the priming, is to turn his head from the gun, and keep blowing gently upon the lighted match to keep it clear from aſhes. And as the miſſing of an enemy in action, by neglect or want of coolneſs, is moſt inexcuſable, it is particularly recommended to have the people thoroughly inſtructed in pointing well, and taught to know the ill conſequences of not taking proper means to hit their mark; wherefore they ſhould be made to elevate

their

their guns to the utmoſt nicety, and then to point with the ſame exactneſs; and having caught the object through the upper-ſight, at the word,

8th. Fire.

" The match is inſtantly to be put to the bruiſed part of the priming; and when the gun is diſcharged the vent is to be cloſed, in order to ſmother any ſpark of fire that may remain in the chamber of the gun; and the man who ſpunges is immediately to place himſelf by the muzzle of the gun in readineſs, when, at the next word,

9th. Spunge your gun.

" The ſpunge is to be rammed down to the bottom of the chamber, and then twiſted round, to extinguiſh effectually any remains of fire; and when drawn out, to be ſtruck againſt the out-ſide of the muzzle, to ſhake off any ſparks or ſcraps of the cartridge that may have come out with it; and next it's end is to be ſhifted ready for loading; and while this is doing, the man appointed to provide a cartridge is to go to the box, and by the time the ſpunge is out of the gun, he is to have it ready; and at the word,

10th. Load with cartridge.

" The cartridge (with the bottom end firſt, ſeam-downwards, and a wad after it) is to be put into the gun, and thruſt a little way within the mouth, when the rammer is to be entered; the cartridge is then to be forcibly rammed down, and the captain at the ſame time is to keep his priming-wire in the vent, and, feeling the cartridge, is to give the word *home*, when the rammer is to be drawn, and not before. While this is doing, the man appointed to provide a ſhot is to provide one (or two, according to the order at that time) ready at the muzzle, with a wad likewiſe, and when the rammer is drawn, at the word,

11th. Shot your guns.

" The ſhot and wad upon it are to be put into the gun, and thruſt a little way down, when the rammer is to be entered as before. The ſhot and wad are to be rammed down to the cartridge, and there have a couple of forcible ſtrokes, when the rammer is to be drawn, and laid out of the way of the guns and tackles, if the exerciſe or action is continued; but if it is over, the ſpunge is to be ſecured in the place it is at all times kept in.

12th. Put in your tompions.

" The tompions to be put into the muzzle of the cannon.

13th. Houſe your guns.

" The ſeizing is to be put on again upon the clinched end of the breeching, leaving it no ſlacker than to admit of the guns being houſed with eaſe. The quoin is to be taken from under the breech of the gun, and the bed, ſtill reſting upon the bolt, within the carriage, thruſt under, till the foot of it falls off the axle-tree, leaving it to reſt upon the end which projects out from the foot. The metal is to be let down upon this. The gun is to be placed exactly ſquare, and the muzzle is to be cloſe to the wood, in it's proper place for paſſing the muzzle laſhings. See CANNON, and fig. 19, plate VII.

14th. Secure your guns.

" The muzzle laſhings muſt firſt be made ſecure, and then with one tackle (having all it's parts equally taught with the breeching) the gun is to be laſhed. The other tackle is to be bowſed taught, and by itſelf made faſt, that it may be ready to caſt off for laſhing a ſecond breeching.

" N. B. Care muſt be taken to hook the firſt tackle to the upper bolt of the carriage, that it may not otherwiſe obſtruct the reeving of the ſecond breeching, and to give the greater length to the end part of the fall.

" No pains muſt be ſpared in bowſing the laſhing very taught, that the gun may have the leaſt play that is poſſible, as their being looſe may be productive of very dangerous conſequences.

" The quoin, crow, and handſpec, are to be put under the gun, the powder-horn hung up in it's place, &c.

" Being engaged at any time when there is a large ſwell, a rough ſea, or in ſqually weather, &c. as the ſhip may be liable to be ſuddenly much heeled, the port-tackle fall is to be kept clear, and (whenever the working of the gun will admit of it) the man charged with that office is to keep it in his hand; at the ſame time the muzzle laſhing is to be kept faſt to the ring of the port, and being hauled taught, is to be faſtened to the eye-bolt over the port-hole, ſo as to be out of the gun's way in firing, in order to haul it in at any time of danger.

" This precaution is not to be omitted, when engaging to the windward, any more than when to the leeward, thoſe ſituations being very ſubject to alter at too ſhort a warning.

" A train-tackle is always to be made uſe of with the lee-guns, and the man ſtationed to attend it is to be very careful in preventing the gun's running out at an improper time."

EXERCISE may alſo be applied with propriety to the forming our fleets into orders of ſailing, lines of battle, &c. an art which the French have termed *evolutions*, or *tactiques*. In this ſenſe exerciſe may be defined, the execution of the movements which the different orders and diſpoſitions of fleets occaſionally require, and which the ſeveral ſhips are directed to perform by means of ſignals.

EYE *of a block-ſtrop.* In the article BLOCK it has been mentioned, that a block is commonly bound with a ring, or wreath, formed of a piece of rope, called the *ſtrop*; the eye of the ſtrop, therefore, is that part by which it is faſtened, or ſuſpended, to any particular place upon the ſails, yards or rigging, the eye whereof is repreſented by fig. 37, plate II. The eye is ſometimes formed by faſtening the two ends of the ſtrop together with a ſhort line, ſo as to bind round a maſt, yard, or boom, as occaſion requires. See fig. 38, of the ſame plate.

EYE *of a ſtay*, (*oeillet*, Fr.) that part of a ſtay which is formed into a ſort of collar to go round a maſt-head.

EYE-BOLT, a long bar of iron with an eye in one end of it, repreſented by fig. 39, plate II. It is formed to be driven into the decks or ſides of a ſhip for divers purpoſes, as to hook *tackles*, or faſten ropes to, as occaſion requires.

EYE-LET-HOLE. See the article SAILS.

EYES *of a ſhip*, (*oeils*, Fr.) a name frequently given to thoſe parts which lie near the hawſe-holes, particularly in the lower apartments within the veſſel.

F.

FACTOR, in commerce, an agent, or correſpondent, reſiding beyond the ſeas, or in ſome remote part, and commiſſioned by merchants to buy or ſell goods on their account, or aſſiſt them to carry on their trade. Hence any place where a conſiderable number of factors reſide, to negociate for their maſters, or employers, is called a factory; as the factories of Liſbon, of Leghorn, of Calcutta, &c.

FAG-END, the end of any rope, or cord, which is become untwiſted and looſened by frequent uſe. To prevent this effect, the ends of ropes are generally well faſtened by winding a piece of ſmall line, or packthread, around them, which operation is called *whipping*.

FAIR, a general term for the diſpoſition of the wind, when it is favourable to a ſhip's courſe, in oppoſition to that which is contrary, or *foul*.

This term, when applied to the wind, is much more comprehenſive than *large*, ſince the former ſeems to include about eighteen points of the compaſs, or at leaſt ſixteen; whereas *large* is confined to the beam or quarter, that is, to a wind which croſſes the keel at right angles, or obliquely from the ſtern, but never to one right a-ſtern. See the articles LARGE and SCANT.

FAIR-CURVE, a winding line, uſed in delineating ſhips, whoſe ſhape is varied according to the part of the ſhip it is intended to deſcribe: this curve is not anſwerable to any of the figures of conic ſections, although it occaſionally partakes of them all.

FAIR-WAY, the path or channel of a narrow bay, river, or haven, in which ſhips uſually advance in their paſſage up and down; ſo that if any veſſels are anchored therein, they are ſaid to lie in the fair way.

FAKE, one of the circles, or windings, of a cable, or hawſer, as it lies diſpoſed in the coil. See the article COILING. The fakes are greater or ſmaller in proportion to the extent of ſpace which a cable is allowed to occupy where it lies.

FALCONETS, (*barces*, Fr.) ſhort cannon, formerly uſed at ſea.

FALL, (*garant*, Fr.) the looſe end of a tackle; or that part upon which the people pull, or hoiſt, to produce the required effect. See the article TACKLE.

To FALL *aboard*. See the article ABOARD.

To FALL *a-ſtern*, (*tomber en arriere*, Fr.) to be driven backwards; to retreat with the ſtern foremoſt: expreſſed of the motion of a ſhip either under ſail or at anchor.

To

To FALL *calm*, *(pacifier*, Fr.) a phraſe expreſſed of the weather, implying to fall into a ſtate of reſt by a total ceſſation of the wind.

Cat-FALL. See the article CAT.

To FALL *down*, *(baiſſer*, Fr.) in navigation, to ſail, or be conducted from any part of a river, towards ſome other nearer to it's mouth or opening.

FALLING-OFF, *(abatée*, Fr.) the movement or direction of the ſhip's head to leeward of the point whither it was lately directed, particularly when ſhe ſails near the wind, or lies by.

FALLING-OFF, is alſo the angle contained between her neareſt approach towards the ſource of the wind, and her furtheſt declination from it, when TRYING. See that article.

FASHION-PIECES, *(eſtains*, Fr.) the aſt-moſt or hind-moſt timbers of a ſhip, which terminate the breadth, and form the ſhape of the ſtern. They are united to the ſtern-poſt, and to the extremity of the wing-tranſom, by a rabbet, and a number of ſtrong nails, or ſpikes, driven from without. See their connexion with the ſtern-poſt and tranſom, in plate X. fig. 1. as explained in the article STERN.

FATHOM, *(bras*, Fr.) a meaſure of ſix feet, uſed for a variety of purpoſes at ſea; as to regulate the length of the rigging, cables, &c. and to divide the log-lines, and ſounding-lines.

To FAY, to fit any two pieces of wood ſo as to join cloſe together. The plank is ſaid to fay to the timbers, when it bears, or lies, cloſe to all the timbers. *Murray's Ship-building.*

FENDERS, (from *fend*,) certain pieces of old cable, timber, faggots, or other materials, hung over the ſide of a ſhip or veſſel, to prevent it from ſtriking or rubbing againſt a wharf, or key: as alſo to preſerve the ſmaller veſſel from being damaged by the larger ones.

To FETCH WAY, to be ſhaken or agitated from one ſide to another. It is uſually applied to a maſt, bowſprit, &c. when it is not ſufficiently wedged, being looſe in the partners: it is alſo ſaid of a caſk, box, or ſuch body which moves by the rolling of the ſhip at ſea, as not being well ſecured and encloſed.

FETCHING *the pump*, the act of pouring a can of water into the upper-part of it, to expel the air which is contained between the lower box, or piſton, and the lower-end of the pump that reſts upon the ſhip's floor; and accordingly to make the water, poured into the chamber, communicate with that in the bottom of the pump-well, ſo as to be thrown out above by *ſtriking* with the brake, or handle. See PUMP.

FID, *(clef de ton*, Fr.) a ſquare bar of wood, or iron, with a ſhoulder at one end, as repreſented in plate IV. fig. 1. It is uſed to ſupport the weight of the top-maſt, when erected at the head of the lower-maſt, by paſſing through a mortiſe in the lower-end of the former, and reſting it's ends on the treſtle-trees, which are ſuſtained by the head of the latter. The fid, therefore, muſt be withdrawn every time the top-maſt is lowered. The top-gallant-maſt is retained at the head of the top-maſt in the ſame manner. See the article MAST.

FID, (*fitta*, Ital.) is alſo a large pin of hard wood, tapering to a point, and uſed for ſplicing of cables or large cordage.

Sea-FIGHT. See the article ENGAGEMENT.

To FILL, in navigation, (*faire ſervir*, Fr.) to brace the ſails in ſuch a manner, as that the wind, entering their cavities from behind, dilates them ſo as to advance the ſhip in her courſe, after the ſails had for ſome time been ſhivering, or braced aback. See thoſe articles.

FIRE-ARROW, (*dard de feu*, Fr.) a ſteel dart uſed by privateers and pirates to fire the ſails of the enemy in battle: theſe machines are particularly deſcribed in the article ENGAGEMENT.

FIRE-SHIP, (*brulot*, Fr.) an old veſſel filled with combuſtible materials, and fitted with grappling-irons to hook, and ſet fire to, the enemies ſhips in battle, &c.

As there is nothing particular in the conſtruction of this ſhip, except the apparatus by which the fire is inſtantly conveyed from one part to another, and from thence to the enemy, it will be ſufficient to deſcribe the fire-room, where theſe combuſtibles are incloſed, together with the inſtruments neceſſary to grapple the ſhip intended to be deſtroyed.

The fire-room is built between decks, and limited on the after-part by a *bulk-head*, L, behind the main-maſt, from which it extends quite forwards, as repreſented in fig. 2, plate IV. The train incloſed in this apartment is contained in a variety of wooden troughs, D, G, which interſect each other in different parts of the ſhip's length; being ſupported at proper diſtances by croſs-pieces and ſtanchions. On each ſide of the ſhip are ſix or ſeven ports, H, about eighteen inches broad, and fifteen inches high, and having their lids to open downward, contrary to the uſual method.

Againſt every port is placed an iron chamber *, which, at the time of firing the ſhip, blows out the port-lid, and opens a paſſage for the flame. Immediately under the main and fore ſhrouds is fixed a wooden funnel, M; whoſe lower-end communicates with a fire-barrel †, by which

* The iron chambers are ten inches long, and 3 . 5 in diameter. They are breeched againſt a piece of wood fixed acroſs the ports, and let into another a little higher. When loaded, they are almoſt filled with corn-powder, and have a wooden tompion well driven into their muzzles. They are primed with a ſmall piece of *quick match* thruſt through their vents into the powder, with a part of it hanging out. When the ports are blown open by means of the iron chambers, the port-lids either fall downward, or are carried away by the exploſion.

† The fire-barrels ought to be of a cylindrical form, as moſt ſuitable to contain the *reeds* with which they are filled, and more convenient for ſtowing them between the troughs in the fire-room. Their inſide diameters ſhould not be leſs than twenty-one inches, and thirty inches is ſufficient for their length. The bottom parts are firſt well ſtored with ſhort double-dipped reeds placed upright; and the remaining vacancy is filled with fire-barrel compoſition, well mixed and melted, and then poured over them. The compoſition uſed for this purpoſe is a maſs of ſulphur, pitch, tar, and tallow.

There are five holes of $\frac{3}{4}$ inch in diameter and three inches deep, formed in the top of the compoſition while it is yet warm; one being in the center, and the other four at equal diſtances round the ſides of the barrel. When the compoſition is cold and hard, the barrel is primed by filling thoſe holes with fuſe-compoſition, which is firmly driven into them, ſo as to

the

the flame paſſing through the funnel is conducted to the ſhrouds. Between the funnels, which are likewiſe called fire-trunks, are two *ſcuttles*, or ſmall holes in the upper deck, ſerving alſo to let out the flames. Both funnels muſt be ſtopped with plugs, and have ſail-cloth, or canvas, nailed cloſe over them, to prevent any accident happening from above to the combuſtibles laid below.

The ports, funnels, and ſcuttles, not only communicate the flames to the out-ſide and upper-works of the ſhip, and her rigging, but likewiſe open a paſſage for the inward air, confined in the fire-room, which is thereby expanded ſo as to force impetuouſly through thoſe out-lets, and prevent the blowing up of the decks, which muſt of neceſſity happen, from ſuch a ſudden and violent rarefaction of the air as will then be produced.

On each ſide of the bulk-head behind is cut a hole L, of ſufficient ſize to admit a trough of the ſame dimenſions as the others. A leading trough, L I, whoſe foremoſt-end communicates with another trough within the fire-room, is laid cloſe to this opening, from whence it extends obliquely to a ſally-port, I, cut through the ſhip's ſide. The decks and troughs are well covered with melted roſin. At the time of firing either of the leading troughs, the flame is immediately conveyed to the oppoſite ſide of the ſhip, whereby both ſides burn together.

The ſpaces N, O, behind the fire-room, repreſent the cabins of the lieutenant and maſter, one of which is on the *ſtarboard*, and the other on the *larboard* ſide. The captain's cabin, which is ſeparated from theſe by a bulk-head, is exhibited alſo by P.

leave a little vacancy at the top to admit a ſtrand of quick-match twice doubled. The center hole contains two ſtrands at their whole length, and every ſtrand muſt be driven home with mealed powder. The looſe ends of the quick-match being then laid within the barrel, the whole is covered with a dipped *curtain*, faſtened on with a hoop that ſlips over the head of the barrel, to which it is nailed.

The barrels ſhould be made very ſtrong, not only to ſupport the weight of the compoſition before firing, when they are moved or carried from place to place, but to keep them together whilſt burning: for if the ſtaves are too light and thin, ſo as to burn very ſoon, the remaining compoſition will tumble out and be diſſipated, and the intention of the barrels, to carry the flame aloft, will accordingly be fruſtrated.

The curtain is a piece of coarſe canvas, nearly a yard in breadth and length, thickened with melted compoſition, and covered with ſaw-duſt on both ſides.

Proportion of Stores for one Fire-ſhip.

	Number of ſtores of each nature.	Interior diameter of each end. Feet. Inches.	Interior diameter at the bulge. Feet. Inches.	Heighth of the compoſition. Feet. Inches.	Greateſt heighth. Feet. Inches.	Weight empty. lb ℥ ʒ	Length of one. Feet. Inches.	Diameter, or the breadth of one. Feet. Inches.	Compoſition. Swediſh pitch. C. Qr. lb	Tallow. C. Qr. lb	Corn powder. C. Qr. lb	Salt petre. C. Qr. lb	Roſin. C. Qr. lb	Sulphur. C. Qr. lb	Mealed powder. C. Qr. lb
Fire barrels, —	8	. 8½	2 9½	2 1	2 4	—	—	—	— — 3	3 — —	— — 6	—	—	—	—
Curtains, —	30	—	—	—	—	—	3 9	3 9	—	—	—	—	—	—	—
Bavins, —	200	—	—	—	—	—	4 6	—	—	—	—	—	—	—	—
Port fires, —	24	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Reeds long, —	150	—	—	—	—	—	3 5	5	— 2 4	— — 6	—	—	1 — 8	— 3 6	— — 12
Reeds ſhort, —	75	—	—	—	—	—	2 6	4½	—	—	—	—	—	—	—
Reeds ſhort double dipt,	75	—	—	—	—	—	2 6	4½	—	—	—	—	—	—	—
Compoſition in barrels, for firing, —	3½	—	—	—	—	—	—	—	—	—	—	— 1 22	— — 6	— 1 12	— 3 16
Quick match in barrels, —	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hand grenadoes, —	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cnambers for ports, —	12	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Four of the eight fire-barrels are placed under the four fire-trunks; and the other four between them, two on each ſide the fire-ſkuttles, where they are ſecurely *cleated* to the deck. The longeſt reeds * are put into the fore and aft troughs, and tied down: the ſhorteſt reeds are laid in the troughs athwart, and tied down alſo. The bavins †, dipped at one end, are tied faſt to the troughs over the reeds, and the curtains are nailed up to the beams, in equal quantities, on each ſide of the fire-room.

The remainder of the reeds are placed in a poſition nearly upright, at all the angles of every ſquare in the fire-room, and there tied down. If any reeds are left, they are to be put round the fire-barrels, and other vacant places, and there tied faſt.

Inſtructions to prime.

Take up all your reeds, one after another, and ſtrow a little compoſition at the bottom of all the troughs under the reeds, and then tie them gently down again: next ſtrow compoſition upon the upper-part of the reeds throughout the fire-room, and upon the ſaid compoſition lay double quick-match ‡ upon all the reeds, in all the troughs: the remainder of the compoſition ſtrow over all the fire-room, and then lay your bavins looſe.

Caſt off all the covers of the fire-barrels, and hang the quick-match looſe over their ſides, and place leaders of quick-match from the reeds into the barrels, and from thence into the vent of the chambers, in ſuch a manner as to be certain of their blowing open the ports, and ſetting fire to the barrels. Two troughs of communication from each door of the fire-room to the ſally-ports, muſt be laid with a ſtrong leader of quick-match, four or five times double: alſo a croſs-piece to go from the ſally-port, when the ſhip is fired, to the communication trough,

* The reeds are made up in ſmall bundles of about a foot in circumference, cut even at both ends, and tied together in two places. They are diſtinguiſhed into two kinds, viz. the long and ſhort; the former of which are four feet, and the latter two feet five inches in length. One part of them are ſingly dipped, i. e. at one end; the reſt are dipped at both ends in a kettle of melted compoſition. After being immerſed about ſeven or eight inches in this preparation, and then drained, they are ſprinkled over with pulveriſed ſulphur upon a tanned hide.

† The bavins are made of birch, heath, or other bruſh-wood, which is tough and readily kindled. They are uſually two or three feet in length, and have all their buſh-ends lying one way, the other ends being tied together with ſmall cords. They are dipped in compoſition at the buſh-ends, whoſe branches are afterwards confined by the hand, to prevent them from breaking off by moving about; and alſo to make them burn more fiercely. After being dipped, in the ſame manner as the reeds, they alſo are ſprinkled with ſulphur.

‡ Quick-match is formed of three cotton ſtrands drawn into length, and dipped in a boiling compoſition of white-wine vinegar, ſalt-petre, and mealed powder. After this immerſion it is taken out hot, and laid in a trough where ſome mealed powder, moiſtened with ſpirits of wine, is thoroughly incorporated into the twiſts of the cotton, by rolling it about therein. Thus prepared, they are taken out ſeparately, and drawn through mealed powder, then hung upon a line till dried, by which they are fit for immediate ſervice.

laid with leaders of quick-match, that the fire may be communicated to both ſides at once.

What quick-match is left, place ſo that the fire may be communicated to all parts of the room at once, eſpecially about the ports and fire-barrels, and ſee that the chambers are well and freſh primed.

N. B. The port-fires * uſed for firing the ſhip, burn about twelve minutes. Great care muſt be taken to have no powder on board when the ſhip is fired.

The ſheer-hooks repreſented by fig. 3. plate IV. are fitted ſo as to faſten on the yard-arms of the fire-ſhip, where they hook the enemies rigging. The fire-grapplings, fig. 4, are either fixed on the yard-arms, or thrown by hand, having a chain to confine the ſhips together, or faſten thoſe inſtruments wherever neceſſary.

When the commanding officer of a fleet diſplays the ſignal to prepare for action, the fire-ſhips fix their ſheer-hooks, and diſpoſe their grapplings in readineſs. The battle being begun, they proceed immediately to prime, and prepare their fire-works. When they are ready for grappling, they inform the admiral thereof by a particular ſignal.

To avoid being diſabled by the enemy's cannon during a general engagement, the fire-ſhips continue ſufficiently diſtant from their line of battle either to windward or to leeward.

They cautiouſly ſhun the openings, or intervals, of the line, where they would be directly expoſed to the enemy's fire, from which they are covered by lying on the oppoſite ſide of their own ſhips. They are attentively to obſerve the ſignals of the admiral, or his ſeconds, in order to put their deſigns immediately in execution.

Although no ſhip of the line ſhould be previouſly appointed to protect any fire-ſhip, except a few of the ſmalleſt particularly deſtined to this ſervice, yet the ſhip before whom ſhe paſſes in order to approach the enemy, ſhould eſcort her thither, and aſſiſt her with an armed boat, or whatever ſuccour may be neceſſary in her ſituation †.

The captain of the fire-ſhip ſhould himſelf be particularly attentive that the above inſtructions are punctually executed, and that the yards may be ſo braced, when he falls along-ſide of the ſhip intended to be deſtroyed, that the ſheer-hooks and grapplings faſtened to the yard-arms, &c. may effectually hook the enemy. He is expected to be the laſt perſon who quits the veſſel, and being furniſhed with every ne-

* Port-fires are frequently uſed by the artillery people in preference to matches, to ſet fire to the powder or compoſitions. They are diſtinguiſhed into wet and dry port-fires. The compoſition of the former is ſalt-petre four, ſulphur one, and mealed powder four. When theſe materials are thoroughly mixed and ſifted, the whole is to be moiſtened with a little linſeed oil, and rubbed between the hands till all the oil is imbibed by the compoſition. The preparation for dry port-fires is ſalt-petre four, ſulphur one, mealed powder two, and antimony one. Theſe compoſitions are driven into ſmall paper caſes, to be uſed whenever neceſſary.

† De Morogues Tact. Navale.

ceſſary aſſiſtance and ſupport, his reputation will greatly depend on the ſucceſs of his enterpriſe.

FISH, a machine employed to hoiſt or draw up the flukes of the ſhip's anchor towards the top of the bow in order to ſtow it, after having been heaved up by the cable. It is compoſed of four parts, viz. the pendent, the block, the hook, and the tackle; which, together with their ſeveral uſes, are deſcribed in the article DAVIT.

FISH, *(jumelle*, Fr.) is alſo a long piece of oak, convex on one ſide, and concave on the other. It is uſed to faſten upon the outſide of the lower maſts, either as an additional ſecurity, to ſtrengthen them when it becomes neceſſary to carry an extraordinary preſſure of ſail, in purſuit of, or flight from, an enemy; or to reinforce them after they have received ſome damage in battle, tempeſtuous weather, &c.

The fiſhes are alſo employed for the ſame purpoſe on any yard, which happens to be ſprung or fractured. Thus their form, application, and utility are exactly like thoſe of the ſplinters applied to a broken limb in ſurgery.

FISH-GIG, *(foeſne*, Fr.) an inſtrument uſed to ſtrike fiſh at ſea, particularly dolphins. It conſiſts of a ſtaff, three or four barbed prongs, and a line faſtened to the end, on which the prongs are fixed: to the other end is fitted a piece of lead, which ſerves to give additional force to the ſtroke when the weapon flies, and to turn the points upward after the fiſh is penetrated.

FITTING-OUT, *(equiper*, Fr.) the act of providing a ſhip with a ſufficient number of men, to navigate and arm her for attack or defence; alſo to furniſh her with proper maſts, ſails, yards, ammunition, artillery, cordage, anchors, and other naval furniture; together with ſufficient proviſions for the ſhip's company.

FLAG, *(pavillon*, Fr. flag, Dutch) a certain banner or ſtandard, by which an admiral is diſtinguiſhed at ſea from the inferior ſhips of his ſquadron; alſo the colours by which one nation is diſtinguiſhed from another.

In the Britiſh navy flags are either red, white, or blue, and are diſplayed from the top of the main-maſt, fore-maſt, or mizen-maſt, according to the rank of the admiral.

The firſt flag in Great Britain is the royal ſtandard, which is only to be hoiſted when the king or queen are aboard the veſſel: the ſecond is that of the anchor of hope, which characteriſes the lord high admiral, or lords commiſſioners of the admiralty: and the third is the union flag, in which the croſſes of St. George and St. Andrew are blended. This laſt is appropriated to the admiral of the fleet, who is the firſt military officer under the lord high admiral.

When a flag is diſplayed from the flag-ſtaff on the main-maſt, the officer diſtinguiſhed thereby is known to be an admiral; when from the fore-maſt, a vice-admiral; and when from the mizen-maſt, a rear admiral.

The next flag after the union is that of the white ſquadron, at the main-maſt-head; and the laſt, which characterizes an admiral, is the blue, at the ſame maſt-head.

For a vice-admiral, the firſt flag is the red; the ſecond, the white; the third, the blue, at the flag-ſtaff on the fore-maſt.

The ſame order proceeds with regard to the rear-admirals, whoſe flags are hoiſted on the top of the mizen-maſt: the loweſt flag in our navy is accordingly the blue on the mizen-maſt.

FLAG-OFFICER, a term ſynonymous to admiral.

FLAG-SHIP, the ſhip on which any flag is diſplayed.

FLAG-STAFF, (*batou*, Fr.) a pole erected at the head of a top-gallant-maſt, or top-maſt, whereon to hoiſt and diſplay the flag or pendent.

FLAKE, (*echafaud*, Fr.) a ſort of ſcaffold or platform, formed of hurdles and ſupported by ſtanchions, and uſed for drying cod-fiſh in Newfoundland. Theſe flakes are uſually placed near the ſhores of fiſhing-harbours. Alſo a ſmall ſtage hung over a ſhip's ſide, to caulk, or repair any breach.

FLAT, (*plain*, Fr.) a level ground lying at a ſmall depth under the ſurface of the ſea, and otherwiſe called a ſhoal or ſhallow.

To FLAT-IN, the action of drawing in the aftmoſt lower-corner, or clue, of a ſail towards the middle of the ſhip, to give the ſail the greater power of turning the veſſel. Thus if the mizen, or after-ſails are flatted-in, it is evident that the intention is to carry the ſtern to leeward, and turn the head nearer to the direction of the wind: and if the head-ſails are flatted-in, the intention is accordingly to make the ſhip *fall off*, when by deſign or accident ſhe has come ſo near the wind as to make the ſails ſhiver. Hence

FLAT-IN FORWARD, (*traverſe miſaine*, Fr.) is the order to draw in the fore-ſheet, jib-ſheet, and fore-ſtay-ſail-ſheet, towards the middle of the ſhip. This operation is ſeldom performed, except in light breezes of wind, when the helm has not ſufficient government of the ſhip.

FLAW, a ſudden breeze, or guſt of wind.

FLEET, (*vaiſſeaux du roi*, Fr. *flota*, Sax.) a general name given to his majeſty's navy, or to any part thereof deſtined on a particular enterpriſe or expedition: alſo a convoy or company of merchant ſhips, *flotte*, *conſerve*, with or without ſhips of war to defend them.

The admirals of his majeſty's fleet are claſſed into three ſquadrons, viz. the red, the white, and the blue. When any of theſe officers are inveſted with the command of a ſquadron or detachment of ſhips of war, the particular ſhips are diſtinguiſhed by the colours of their reſpective ſquadron: that is to ſay, the ſhips of the red ſquadron wear an enſign, whoſe union is diſplayed on a red field; the enſigns of the white ſquadron have a white field; and thoſe of the blue ſquadron, a blue field; the union being common to all three. The ſhips of war therefore are occaſionally annexed to any of the three ſquadrons, or ſhifted from one to another.

Of whatſoever number a fleet of ſhips of war is compoſed, it is uſually divided into three ſquadrons; and theſe, if numerous, are again ſeparated into diviſions. The admiral, or principal officer, commands the center; the vice-admiral, or ſecond in command, ſuperintends the van-guard; and the operations of the rear are directed by the rear admiral, or the officer next in rank. See the article DIVISION.

The diſpoſition of a fleet, while proceeding on a voyage, will in ſome meaſure depend on particular circumſtances; as the difficulty of the navigation; the neceſſity of diſpatch, according to the urgency or importance of the expedition: or the expectation of an enemy in the paſſage. The moſt convenient order is probably to range it into three lines or columns, each of which is parallel to a line cloſe-hauled, according to the tack on which the line of battle is deſigned to be formed. This arrangement is more uſed than any, becauſe it contains the advantages of every other form, without their inconveniencies. The fleet being thus more incloſed will more readily obſerve the ſignals, and with greater facility form itſelf into the line of battle; a circumſtance which ſhould be kept in view in every order of ſailing.

FLEETING, the act of changing the ſituation of a tackle, when the blocks are drawn together; or what is called *block and block* by ſailors. The uſe of fleeting is accordingly to replace the mechanical powers into a ſtate of action; the force by which they operated before being deſtroyed by the meeting of the blocks or pullies.

Fleeting therefore is nearly ſimilar to the winding up of a watch or clock. See the article TACKLE.

FLOAT, a raft, or quantity of timber faſtened together acroſs, to be wafted along a river with the tide or current.

FLOATING, (*flotter*, Fr.) the ſtate of being borne up, or wafted along with the tide on the ſurface of the water, the theory of which is explained in the article TRIM.

FLOOR, the bottom of a ſhip; or all that part on each ſide of the keel, which approaches nearer to an horizontal than to a perpendicular ſituation, and whereon ſhe reſts when aground. Thus it is common to ſay, a ſharp floor, a flat floor, a long floor, &c. Whence

FLOOR-TIMBERS, (*varangues*, Fr.) are thoſe parts of the ſhip's timbers which are placed immediately acroſs the keel, and upon which the bottom of the ſhip is framed; to theſe the upper parts of the *timbers* are united, being only a continuation of floor-timbers upwards. See *Naval* ARCHITECTURE.

FLOWING, the poſition of the *ſheets*, or lower corners of the principal ſails, when they are looſened to the wind, ſo as to receive it into their cavities in a direction more nearly perpendicular than when they are *cloſe-hauled*, although more obliquely than when the veſſel is ſailing before the wind.

A ſhip is therefore ſaid to have a flowing ſheet when the wind croſſes the line of her courſe nearly at right angles: that is to ſay, a ſhip ſteering due north, with the wind at eaſt, or directly on her ſide, will have a flowing ſheet; whereas if the ſheets were extended cloſe afr, ſhe would ſail two points nearer the wind, viz. N. N. E. See the articles CLOSE-HAULED, LARGE, and TRIM.

FLUSH, See the article DECK.

FLY *of an enſign*, (*battant*, Fr,) the breadth or extent from the ſtaff to the extremity or edge that flutters looſe in the wind.

FLY-BOAT, or FLIGHT, a large flat-bottomed Dutch veſſel, whoſe burthen is generally from four to ſix hundred tons. It is diſtinguiſhed by a ſtern remarkably high, reſembling a Gothic turret, and by a very broad buttock below.

FOG, (*brume*, Fr.) a miſt at ſea.

FOOT *of a ſail*, (*fond de voile*, Fr.) lower edge or bottom.

FOOT-ROPE, the rope to which the foot of a ſail is ſewed. See BOLT-ROPE.

FOOT-ROPES are alſo the ſame with horſes of the yards. See that article.

FOOT-WALEING, the whole inſide planks or lining of a ſhip, uſed to prevent any part of the ballaſt or cargo from falling between the floor-timbers. See MIDSHIP-FRAME.

FORE, the diſtinguiſhing character of all that part of a ſhip's frame and machinery which lies near the ſtem.

FORE AND AFT, throughout the ſhip's whole length, or from end to end.

FORE-BOWLINE, the bowline of the fore-ſail. See BOWLINE.

FORE-CASTLE, (*gaillard d'avant*, Fr.) a ſhort deck placed in the fore-part of the ſhip, above the upper deck. It is uſually terminated, both before and behind, by a breaſt-work in veſſels of war; the foremoſt end forming the top of the *beak-head*, and the hind part reaching to the after-part of the fore-chains.

FORE-CAT-HARPINS, a complication of ropes uſed to brace-in the upper part of the fore-ſhrouds. See CAT-HARPINS.

FORE-FOOT. (*brion*, Fr.) a piece of timber which terminates the keel at the fore-end. It is connected by a ſcarf to the extremity of the keel, of which it makes a part: and the other end of it, which is incurvated upwards into a ſort of knee or crotch, is attached to the lower end of the ſtem: of which it alſo makes a part, being alſo called the *gripe*.

As the lower arm of the fore-foot lies on the ſame level with the keel, ſo the upper one coincides with the middle line of the ſtem: it's breadth and thickneſs therefore correſpond to the dimenſions of thoſe pieces, and the heel of the cut-water is ſcarfed to it's upper end.

The form of this piece, and it's diſpoſition and connection with the adjacent pieces, appears by the letter *i*, in plate I. PIECES of the HULL.

FORE-HOOKS, the ſame with breaſt-hooks, which ſee.

FORELAND, a cape or promontory, projecting into the ſea; as the North or South Forelands.

FORE-LOCK, (*clavette*, Fr.) a little flat-pointed wedge of iron, uſed to drive through a hole in the end of a bolt, to retain it firmly in it's place.

FORE-JEARS.	See	JEARS.
FORE-MAST.		MAST.
FORE-SAIL.		SAIL.
FORE-SHROUDS.		SHROUDS.
FORE-STAY.		STAY.
FORE-TOP.		TOP.
FORE-TOP-MAST.		TOP-MAST.
FORE-TOP-GALLANT-MAST.		TOP-GALLANT-MAST.
FORE-TYE.		TYE.
Fore-YARD, &c.		YARD, &c.

N. B.

N. B. By referring to the articles *Top-maſt* and *Top-gallant-maſt*, we mean to comprehend all the apparatus thereto belonging, as their yards, ſails, &c.

FORE-REACHING UPON, the act of advancing before, or gaining ground of, ſome other ſhip or ſhips in company.

FORGING OVER, the act of forcing a ſhip violently over a ſhoal, by the effort of a great quantity of ſail.

FORMING *the Line*. See the article LINE.

FORWARD, (*avant*, Fr.) towards the fore-part of the ſhip. See AFORE.

FOTHERING, a peculiar method of endeavouring to ſtop a leak in the bottom of a ſhip while ſhe is afloat, either under ſail or at anchor. It is uſually performed in the following manner: a baſket is filled with aſhes, cinders, and chopped rope-yarns, *bonette lardée*, Fr. and looſely covered with a piece of canvas; to this is faſtened a long pole, by which it is plunged repeatedly in the water, as cloſe as poſſible to the place where the leak is conjectured to lie. The oakum, or chopped rope-yarns, being thus gradually ſhaken through the twigs, or over the top of the baſket, are frequently ſucked into the hole along with the water, ſo that the leak becomes immediately choaked, and the future entrance of the water is thereby prevented.

FOUL, (*empechée*, Fr.) as a ſea term, is generally uſed in oppoſition to clear, and implies entangled, embarraſſed, or contrary, in the following ſenſes:

A ſhip ran foul of us in the river, *i. e.* entangled herſelf amongſt our rigging.

FOUL, when expreſſed of a ſhip's bottom, denotes that it is very dirty; as being covered with graſs, ſea-weeds, ſhells, or other filth which gathers to it during the courſe of a long voyage. When underſtood of the ground or bottom of a road, bay, ſea coaſt, or harbour, *mal fain*, Fr. it ſignifies rocky, or abounding with ſhallows, or otherwiſe dangerous.

When ſpoken of the hawſe, it means that the cables are turned round each other, by the winding or turning about of the ſhip while ſhe rides at anchor. See ELBOW and HAWSE.

FOUL, when applied to the wind, is uſed to expreſs that it is unfavourable, or contrary to the ſhip's courſe, as oppoſed to *large* or *fair*.

To FOUNDER, (*fancir*, Fr.) to ſink at ſea, as being rendered, by the violence and continuation of a ſtorm and the exceſs of the leaks, unable to keep the ſhip afloat above the water.

FOX, a ſort of *ſtrand*, formed by twiſting ſeveral rope-yarns together, and uſed as a *ſeizing*, or to weave a *mat* or *paunch*, &c.

FRAME. See TIMBER.

FRAPING, the act of croſſing and drawing together the ſeveral parts of a tackle, or other complication of ropes, which had already been ſtraightened to their utmoſt extent: in this ſenſe it exactly reſembles the operation of bracing up a drum, &c. The fraping always increaſes the tenſion, and of courſe adds to the ſecurity acquired by the purchaſe. Hence the Cat-harpins are no other than frapings to the ſhrouds.

FRAPING *a ſhip*, (*ceintrer*, Fr.) the act of paſſing three, four, or five turns of a cable round the hull, or frame of a ſhip, in the middle, to ſupport her in a great ſtorm, when it is apprehended that ſhe is not ſtrong enough to reſiſt the violent efforts of the ſea. This expedient however is rarely put in practice, unleſs in very old ſhips, which their owners are willing to venture to ſea as long as poſſible, by enſuring them deeply.

FREEING, (*affranchir*, Fr.) the act of pumping, or otherwiſe throwing out the water which has leaked into a ſhip's bottom at ſea, &c.

FREEZING, a ſort of ornamental painting on the upper part of a ſhip's *quarter*, *ſtern*, or *bow*. It conſiſts generally of armour, inſtruments of war, marine emblems, &c.

FREIGHT, or *fraight of a ſhip*, (*affretement*, Fr.) the hire, or a part thereof, uſually paid for the carriage and conveyance of goods; or the ſum agreed upon between the owner and the merchant for the hire and uſe of a veſſel.

FREIGHT alſo implies the lading or cargo which ſhe has abroad.

FRESH, when applied to the wind, generally ſignifies ſtrong, but not violent or dangerous: hence when the gale increaſes, it is ſaid to freſhen.

To FRESHEN *the hawſe*, (*refraichir*, Fr.) to relieve that part of the cable which for ſome time has been expoſed to the friction in one of the *hawſe-holes*, produced by the rolling and pitching of a ſhip as ſhe rides at anchor in a high ſea.

When a ſhip remains in ſuch a ſituation, it is always neceſſary to wrap ſome old canvas, mat, leather, or ſuch like material, round that part of the cable which rubs againſt the *ſtem*, &c. The matter uſed for this purpoſe is called *ſervice*: but as the violent agitation of the ſhip, produced by the tempeſt, or ſea, as ſhe rides in an open road, muſt communicate a great friction to the cable, the ſervice will conſequently be ſoon worn through: it is neceſſary therefore to have it frequently renewed by a freſh application of the like materials, behind the former, for the preſervation of the cable, on which every thing depends; and this renewal of ſervice is called *freſhening the hawſe*, a circumſtance which cannot be too vigilantly obſerved.

FRESHES, (*ſouberme*, Fr.) imply the impetuoſity of an ebb-tide, increaſed by heavy rains and flowing out into the ſea, which it often diſcolours to a conſiderable diſtance from the ſhore; inaſmuch as the line, which divides the two colours, may be perceived diſtinctly for a great length along the coaſt.

FRIGATE, (*fregate*, Fr.) in the navy, a light nimble ſhip, built for the purpoſes of ſailing ſwiftly. Theſe veſſels mount from twenty to thirty-eight guns, and are eſteemed excellent cruizers.

FRIGATE-BUILT, (*fregaté*, Fr.) implies the diſpoſition of the decks of ſuch merchant-ſhips as have a deſcent of four or five ſteps from the *quarter-deck* and *fore-caſtle* into the *waiſt*, in contra-diſtinction to thoſe whoſe decks are on a continued line for the whole length of the ſhip, which are called *galley-built*. See the article FLUSH.

Formerly the name of frigate was only known in the Mediterranean, and applied to a kind of long veſſel, navigated in that ſea with ſails and oars.

The

The Engliſh were the firſt who appeared on the ocean with thoſe ſhips, and equipped them for war as well as commerce.

FULL AND BY, (*pres & plein*, Fr.) the ſituation of a ſhip with regard to the wind, when ſhe is cloſe-hauled, and ſailing in ſuch a manner as neither to ſteer too nigh the direction of the wind, nor to deviate to leeward; both of which movements are unfavourable to her courſe, as in the former her ſails will ſhiver, and render the effort of the wind precarious and ineffectual; and in the latter ſhe will advance in a direction widely diſtant from her real courſe. Hence, keep her full! (*deſie du vent!* Fr.) is the order from the pilot or other officer to the helmſman, not to incline too much to windward, and thereby ſhake the ſails ſo as to retard the courſe.

FURLING, (*ferler*, Fr.) the operation of wrapping or rolling a ſail cloſe up to the *yard*, *ſtay*, or *maſt* to which it belongs, and winding a gaſket or cord about it to faſten it thereto. And hence

FURLING-LINE denotes a cord employed in this office: thoſe which are uſed for the larger ſails are generally flat, and are known by the name of *gaſkets*.

FUTTOCKS, the middle diviſion of a ſhip's timbers; or thoſe parts which are ſituated between the *floor* and the top-timbers. See this fully explained in the article TIMBER.

As the epithet *hooked* is frequently applied in common language to any thing bent or incurvated, and particularly to ſeveral crooked timbers in a ſhip, as the *breaſt-hooks*, *fore-hooks*, *after-hooks*, &c. this term is evidently derived from the loweſt part or *foot* of the timber, and from the ſhape of the piece. Hence

FUTTOCK-SHROUDS, or rather FOOT-HOOK SHROUDS. See the article SHROUDS.

G.

GAFF, a ſort of boom or pole, frequently uſed in ſmall ſhips, to extend the upper edge of the mizen; and always employed for the ſame purpoſe on thoſe ſails whoſe foremoſt edges are joined to the maſt by hoops or laceings, and which are uſually extended by a *boom* below. Such are the main-ſails of all ſloops, brigs, and ſchooners.

The foremoſt, or inner extremity of the gaff, is furniſhed with two cheeks forming a ſemicircle, which incloſe the after part of the maſt ſo as to confine the gaff cloſe to it's reſpective maſt whilſt the ſail is hoiſting or lowering. It is further ſecured in this ſituation by a rope paſſing from one of the cheeks to the other on the fore-ſide of the maſt; and to prevent the friction of this rope upon the maſt, by hoiſting or lowering, ſeveral little wooden balls, called *trucks*, are hung upon it, in the ſame manner as the holy beads are hung upon a catholic's roſary.

GAGE. See WEATHER-GAGE.

To GAIN *the wind*, in navigation, (*gagner au vent*, Fr.) to arrive on the weather-ſide, or to windward of, ſome other veſſel in ſight, when both are plying to windward, or ſailing as near the wind as poſſible.

GALE *of wind*, a phraſe uſed by ſailors to expreſs a ſtorm or tempeſt. It is more particularly termed a hard gale, or ſtrong gale.

GALEON, a name formerly given to ſhips of war, furniſhed with three or four batteries of cannon. It is now retained only by the Spaniards, and applied to the largeſt ſize of their merchant ſhips, employed on Weſt-Indian voyages, and uſually furniſhed with four decks. They likewiſe beſtow the ſame name on thoſe veſſels, whether great or ſmall, which proceed annually to La Vera Cruz. The Portugueze alſo have ſeveral ſhips which they ſend to India and the Brazils, nearly reſembling the galeons, and by them called *caragues*.

GALLED, (*raqué*, Fr.) the ſtate of a maſt, yard, cable, or other rope, when it is deprived of the ſurface, and chafed by friction. To preſerve thoſe articles from being damaged by this effect, it is therefore uſual to cover them with ſkins, mats, canvas, or ſuch materials, in the places where they are the moſt expoſed to it by the rolling of the veſſel. See the article SERVICE.

GALLERY, a balcony projecting from the *ſtern* or *quarter* of a ſhip of war, or large merchantmen. In the former, the ſtern-gallery is uſually decorated with a baluſtrade, extending from one ſide of the ſhip to the other; the fore-part is limited by a partition called the ſkreen-bulk head, in which are framed the cabin windows; and the roof of it is formed by a ſort of vault,

vault, termed the *cove*, which is frequently ornamented with ſculpture. See STERN.

The quarter gallery of a ſhip of 74 guns is repreſented at large, in the plate referred to from the article QUARTER.

GALLEY, (*galere*, Fr.) a kind of low flat-built veſſel, furniſhed with one deck, and navigated with ſails and oars, particularly in the Mediterranean.

The largeſt ſort of theſe veſſels, (*galeaſſe*, Fr.) is employed only by the Venetians. They are commonly 162 feet long above, and 133 feet by the keel; 32 feet wide, with 23 feet length of ſtern-poſt. They are furniſhed with three maſts, and thirty-two banks of oars; every bank containing two oars, and every oar being managed by ſix or ſeven ſlaves, who are uſually chained thereto. In the fore-part they have three little batteries of cannon, of which the loweſt is of two 36 pounders, the ſecond of two 24 pounders, and the uppermoſt of two 2 pounders: three 18 pounders are alſo planted on each quarter. The complement of men for one of theſe gallies is generally 1000 or 1200. They are eſteemed extremely convenient for bombarding or making a deſcent upon an enemy's coaſt, as drawing but little water; and having by their oars frequently the advantage of a ſhip of war, in light winds or calms, by cannonading the latter near the ſurface of the water: by ſcouring her whole length with their ſhot, and at the ſame time keeping on her quarter, or bow, ſo as to be out of the direction of her cannon.

The gallies next in ſize to theſe, which are alſo called half-gallies, are from 120 to 130 feet long, 18 feet broad, and 9 or 10 feet deep. They have two maſts, which may be ſtruck at pleaſure, and are furniſhed with two large lateen ſails, and five pieces of cannon. They have commonly 25 banks of oars, as deſcribed above. A ſize ſtill leſs than theſe are called quarter-gallies, carrying from twelve to ſixteen banks of oars. There are very few gallies now beſides thoſe in the Mediterranean, which are found by experience to be of little utility, except in fine weather; a circumſtance which renders their ſervice extremely precarious. They generally keep cloſe under the ſhore, but ſometimes venture out to ſea to perform a ſummer cruiſe. See the articles QUARTER and VESSEL.

GAMMONING, (*lieure*, Fr.) a rope uſed to bind the inner quarter of the bowſprit cloſe down to the ſhip's ſtem, in order to enable it the better to ſupport the ſtays of the fore-maſt, and carry ſail in the fore part of the veſſel. Seven or eight turns of this rope, fig. 6, 8, and 9. plate IV. are paſſed over the bowſprit A, and through a large hole in the ſtem or knee of the head Y alternately: after all the turns are drawn as firm as poſſible, the oppoſite ones are braced together under the bowſprit by a *frapping*, as exhibited in the ſame figure.

GANG, a ſelect number of a ſhip's crew appointed on any particular ſervice, and commanded by an officer ſuitable to the occaſion.

GANG-BOARD, (*planche*, Fr.) a board or plank with ſeveral cleats or ſteps nailed upon it for the convenience of walking into, or out of, a boat upon the ſhore, where the water is not deep enough to float the boat cloſe to the landing-place.

GANGWAY, (*paſſe-avant*, Fr.) a narrow platform, or range of planks, laid horizontally along the upper part of a ſhip's ſide, from the quarter-deck to the forecaſtle, for the convenience of walking more expeditiouſly *fore and aft*, than by deſcending into the waiſt. This platform is therefore peculiar to ſhips which are *deep-waiſted*. It is fenced on the outſide by ſeveral ſmall iron pillars, and a rope extended from one to the other; and ſometimes by a netting, to prevent any one from falling off into the ſea when the ſhip is in motion. This is frequently called the gang-board in merchant veſſels.

GANGWAY, (*echelle*, Fr.) is alſo that part of a ſhip's ſide, both within and without, by which the paſſengers enter and depart. It is for this purpoſe provided with a ſufficient number of ſteps, or *cleats*, nailed upon the ſhip's ſide, nearly as low as the ſurface of the water; and ſometimes furniſhed with a railed accommodation-ladder, whoſe lower end projects from the ſhip's ſide, being ſecured in this poſition by iron braces, ſo as to render the aſcent and deſcent extremely convenient.

GANGWAY, (*accouriie*, Fr.) is likewiſe uſed to ſignify a paſſage left in the hold, when a ſhip is laden, in order to arrive at any particular place therein, occaſionally; as to examine the ſituation of the proviſions or cargo; to diſcover and ſtop a leak; or to bring out any article required for ſervice; &c. Finally, a gangway implies a thoroughfare, or narrow paſſage of any kind.

GARLAND, a ſort of net, whoſe opening is extended by a wooden hoop of ſufficient ſize to admit a bowl or platter within it. It is accordingly uſed by the ſailors as a locker or cupboard to contain their proviſions, being hung up to the deck within the *birth*, where they commonly meſs between decks.

Shot-GARLAND, (*epitié*, Fr.) a piece of timber nailed horizontally along the ſhip's ſide from one gun-port to another, and uſed to contain the round-ſhot ready for charging the great guns in battle. For this purpoſe it is furniſhed with ſeveral ſemi-globular cavities, correſponding to the ſize of the cannon-balls which it is employed to contain.

GARNET, (*garaut*, Fr.) a ſort of tackle fixed to the main-ſtay of a merchant ſhip, and uſed to hoiſt in and out the goods of which the cargo is compoſed.

GARNET is alſo a ſmall tackle faſtened to the clues or lower corners of the main-ſail or fore-ſail, for the purpoſe of truſſing up thoſe ſails, as occaſion requires; and hence it is called CLUE-GARNET, which ſee.

GARBOARD-STREAK, (*gabord*, Fr.) in ſhip-building, the firſt range or *ſtreak* of planks laid upon a ſhip's bottom next to the keel, throughout the whole length of the floor. The edge of this plank is let into a groove or channel in the ſide of the keel, which is called the rabbet of the garboard-ſtreak.

GASKET, (*garcet*, Fr.) a ſort of platted cord faſtened to the ſail-yards of a ſhip, and uſed to *furl* or tie up the ſail firmly to the yard. This is performed by wrapping the gaſket round the yard and ſail ſix or ſeven times, the turns being at a competent diſtance from each other.

GAUNTLOPE, pronounced gauntlet, a race which a criminal is ſentenced to run in a veſſel of war, as a puniſhment for felony, or ſome other heinous offence.

It is executed in the following manner: the whole ſhip's crew is diſpoſed in two rows, ſtanding face to face on both ſides of the deck, ſo as to form a lane, whereby to go *forward* on one ſide, and return *aft* on the other; each perſon being furniſhed with a ſmall twiſted cord, called a knittle, having two or three knots upon it. The delinquent is then ſtripped naked above the waiſt, and ordered to paſs forward between the two rows of men, and aft on the other ſide, a certain number of times, rarely exceeding three; during which every perſon gives him a ſtripe as he runs along. In his paſſage through this painful ordeal he is ſometimes tripped up, and very ſeverely handled while incapable of proceeding. This puniſhment, which is called *running the gauntlet*, (*courir la bouline*, Fr.) is ſeldom inflicted except for ſuch crimes as will naturally excite a general antipathy amongſt the ſeamen; as on ſome occaſions the culprit would paſs without receiving a ſingle blow, particularly in caſes of mutiny or ſedition, to the puniſhment of which our common ſailors ſeem to have a conſtitutional averſion.

GEARS. See JEARS.

GIMBALS, (*balanciers*, Fr.) the braſs rings by which a ſea-compaſs is ſuſpended in it's box that uſually ſtands in the binacle. See the article BINACLE.

GIMBLETING, a term particularly applied to the anchor, to denote the action of turning it round by the ſtock, ſo that the motion of the ſtock appears ſimilar to that of the handle of a gimblet, when it is employed to turn the wire.

GIRT, the ſituation of a ſhip which is moored ſo ſtrait by her cables, extending from the *hawſe* to two diſtant anchors, as to be prevented from ſwinging or turning about, according to any change of the wind or tide, to the current of which her head would otherwiſe be directed.

The cables are extended in this manner, by a ſtrong application of mechanical powers within the ſhip; ſo that as ſhe veers, or endeavours to ſwing about, her ſide bears upon one of the cables, which catches on her heel, and interrupts her in the act of traverſing. In this poſition ſhe muſt ride with her broadſide or ſtern to the wind or current, till one or both of the cables are ſlackened ſo as to ſink under the keel; after which the ſhip will readily yield to the effort of the wind or current, and turn her head thither. See the article RIDING.

GIRT-LINE, (*cartahu*, Fr.) a rope paſſing through a ſingle block, on the head of the lower maſts, to hoiſt up the rigging thereof; as alſo the perſons employed to place the rigging and croſs-trees upon the maſt-heads. The girt-line is therefore the firſt rope employed to rig a ſhip, and by means of this all the reſt are drawn up and fixed; after which it is removed till the ſhip is to be unrigged.

GONDOLA, a ſort of *barge*, curiouſly ornamented, and navigated on the canals of Venice; alſo a paſſage-boat of ſix or eight oars, in other parts of the coaſt of Italy.

GOOGINGS, (*femelles*, Fr.) certain clamps of iron bolted on the ſtern-poſt of a ſhip, whereon to hang the rudder, and keep it ſteady; for which purpoſe there is a hole in each of them, to receive a correſpondent ſpindle bolted on the back of the rudder, which turns thereby as upon hinges.

There are generally four, five, or ſix googings on a ſhip's ſtern-poſt and rudder, according to her ſize, and upon theſe the rudder is ſupported, and traverſes from ſide to ſide as upon an axis. See HELM.

GOOSE-NECK, a ſort of iron hook fitted on the inner end of a boom, and introduced into a clamp of iron, or eye-bolt, which encircles the maſt, or is fitted to ſome other place in the ſhip, ſo that it may be unhooked at pleaſure. See BOOM.

GOOSE-WINGS *of a ſail*, the clues or lower corners of a ſhip's main-ſail, or fore-ſail, when the middle part is furled or tied up to the yard.

The gooſe-wings are only uſed in a great ſtorm to ſcud before the wind, when the ſail at large, or even diminiſhed by a *reef*, would be too great a preſſure on the ſhip, in that ſituation.

GORING, (*'angue*, Fr.) that part of the ſkirts of a ſail, where it gradually widens from the upper part or head, towards the bottom: the goring-cloths are therefore thoſe, which are cut obliquely, and added to the breadth. See SAIL.

GRAPPLING, (*grapin criſſon*, Fr.) a ſort of ſmall anchor, fitted with four or five flukes or claws, plate IV. fig. 5. and commonly uſed to ride a boat or other ſmall veſſel.

Fire-GRAPPLING, (*grapin d' abordage*, Fr.) an inſtrument nearly reſembling the former, but differing in the conſtruction of it's flukes, which are furniſhed with ſtrong barbs on their points, fig. 4. plate IV. Theſe machines are uſually fixed on the yard-arms of a ſhip, in order to grapple any adverſary whom ſhe intends to board. They are however more particularly uſeful in *fire-ſhips*, for the purpoſes deſcribed in that article.

GRATINGS, (*caillebotis*, Fr.) a ſort of open covers for the hatches, formed by ſeveral ſmall laths or battens of wood, which croſs each other at right angles, leaving a ſquare interval between. They are formed to admit the air and light from above into the lower apartments of the ſhip, particularly when the turbulence of the ſea or weather renders it neceſſary to ſhut the ports between decks; and alſo to let the ſmoke eſcape from the lower decks in the time of battle.

Ledges of the GRATINGS, (*barrotins de caillebotis*, Fr.) ledges of the gratings.

GRATING, (*egouttoir*,) a drain whereon to lay new tarred cordage.

GRAVING, (*oeuvres de marée*, Fr.) the act of cleaning a ſhip's bottom when ſhe is laid aground during the receſs of the tide. See the article BREAMING, where this operation is particularly explained.

GRIPE, the ſame with FORE-FOOT. See that article.

GRIPES, (*haubans de chaloupe*, Fr.) a machine formed by an aſſemblage of ropes, hooks, and *dead-eyes*, and uſed to ſecure the boats upon the deck of a ſhip at ſea, and prevent them from being ſhaken by the labouring of the veſſel. The hooks, which are faſtened at their ends, are fixed in ring-bolts in the deck on each ſide of the boat; whence, paſſing over her middle and extremities, they are extended by means of the dead-eyes, ſo as to render the boats as firm and ſecure as poſſible.

GRIPING,

GRIPING, (*ardent*, Fr. the inclination of a ſhip to run to windward of her courſe, particularly when ſhe ſails with the wind on her beam or quarter. This effect is partly occaſioned by the ſhock of the waves that ſtrike the ſhip perpetually on the weather-quarter, and force the ſtern to leeward; but chiefly by the arrangement of the ſails, which diſpoſes the ſhip continually to edge to windward, while in this ſituation of ſailing.

GROMMET, (*bague*, *daillot*, Fr.) a ſort of ſmall wreath, formed of a *ſtrand* of rope, and uſed to faſten the upper edge of a ſtay-ſail to it's reſpective ſtay, in different places. By means of the grommets, the ſail is accordingly hoiſted or lowered, *i. e.* drawn up or down upon it's ſtay, in the ſame manner as a curtain is extended or drawn along upon it's rod, by the aſſiſtance of rings. See alſo the article HANK.

GROUNDING, the act of laying a ſhip aſhore, in order to bream or repair her. It is alſo applied to running aground accidentally when under ſail, or driving in a tempeſt.

GROUND-TACKLE, (*amarrages*, Fr.) a general name given to all ſorts of ropes and furniture which belong to the anchors, or which are employed in mooring, or otherwiſe ſecuring a ſhip in a road or harbour; as cables, hawſers, tow-lines, warps, and buoy-ropes.

GROWING, implies the direction of the cable from the ſhip towards the anchors; as, the cable grows on the ſtarboard-bow, *i. e.* ſtretches out forwards on the ſtarboard, or right ſide.

GUARD-BOAT, a boat appointed to row the rounds amongſt the ſhips of war which are laid up in any harbour, &c. to obſerve that their officers keep a good look-out, calling to the guard-boat as ſhe paſſes, and not ſuffering her crew to come aboard, without having previouſly communicated the watch-word of the night.

GUARD-IRONS, certain curved or arched bars of iron placed over the ornamental figures, on a ſhip's head or quarter, to defend them from the impreſſion of ſome other ſhip when they lie cloſe to, or rub againſt each other.

GUARD-SHIP, a veſſel of war appointed to ſuperintend the marine affairs in a harbour or river, and to ſee that the ſhips which are not commiſſioned have their proper watch kept duly, by ſending her guard-boats around them every night: ſhe is alſo to receive ſeamen who are impreſſed in the time of war.

GULF, (*golfe*, Fr. *golfo*, Ital.) a broad and capacious bay, comprehended between two promontories, and ſometimes taking the name of a ſea, when it is very extenſive, but particularly when it only communicates with the ſea by means of a ſtreight: ſuch are the Euxine, or Black Sea, otherwiſe called the gulf of Conſtantinople; the Adriatic Sea, called alſo the gulf of Venice; the gulf of Sidra near Barbary, and the gulf of Lions near France: all theſe gulfs are in the Mediterranean: there are beſides the gulf of Mexico, the gulf of St. Lawrence, and the gulf of Calliphornia, which are in North America. There are alſo the gulf of Perſia, otherwiſe called the Red Sea, between Perſia and Arabia; the gulf of Bengal

Bengal in India, and the gulfs of Cochinchina and Kamtſchatca, near the countries of the ſame name.

GUNNEL, or GUN-WALE, (*plat-bord*, Fr.) the upper edge of a ſhip's ſide.

GUNNER *of a ſhip of war*, (*cannonier de vaiſſeau*, Fr.) an officer appointed to take charge of the artillery and ammunition aboard, to obſerve that the former are always kept in order, and properly fitted with tackles and other furniture, and to teach the ſailors the exerciſe of the cannon. See EXERCISE.

GUN-ROOM, an appartment on the after end of the lower, or gun-deck, of a ſhip of war; generally deſtined for the uſe of the gunner in large ſhips, but in ſmall ones, it is uſed by the lieutenants as a dining-room, &c.

GUST, (*dragon de vent*, Fr.) a ſudden and violent ſquall of wind, burſting from the hills upon the ſea, ſo as to endanger the ſhipping near the ſhore. Theſe are peculiar to ſome coaſts, as thoſe of South-Barbary and Guinea.

GUTTER-LEDGE, (*traverſier d'ecoutille*, Fr.) a croſs bar laid along the middle of a large hatchway in ſome veſſels, to ſupport the covers, and enable them the better to ſuſtain any weighty body which may be moved or laid thereon.

GUY, a rope uſed to keep ſteady any weighty body whilſt it is hoiſting or lowering, particularly when the ſhip is ſhaken by a tempeſtuous ſea.

GUY is likewiſe a large ſlack rope, extending from the head of the main-maſt to the head of the fore-maſt, and having two or three large blocks faſtened to the middle of it. This is chiefly employed to ſuſtain the tackle uſed to hoiſt in and out the cargo of a merchant ſhip, and is accordingly removed from the maſt-heads as ſoon as the veſſel is laden or delivered.

GYBING, the act of ſhifting any boom-ſail from one ſide of the maſt to the other.

In order to underſtand this operation more clearly, it is neceſſary to remark, that by a boom-ſail is meant any ſail whoſe bottom is extended by a *boom*, the fore-end of which is hooked to it's reſpective maſt, ſo as to ſwing occaſionally on either ſide of the veſſel, deſcribing an arch, of which the maſt will be the center. As the wind or the courſe changes, it alſo becomes frequently neceſſary to change the poſition of the boom, together with it's ſail, which is accordingly ſhifted to the other ſide of the veſſel as a door turns upon it's hinges. The boom is puſhed out by the effort of the wind upon the ſail, and is reſtrained in a proper ſituation by a ſtrong *tackle* communicating with the veſſel's ſtern, and called the *ſheet*. It is alſo confined on the fore-part by another tackle, called the *guy*. See the preceding article.

H.

HAGS TEETH, or HAKES TRETH, thoſe parts of a *matting*, *pointing*, &c. which are interwoven with the reſt, in an erroneous and irregular manner, ſo as to appear aukward in the general uniformity of the work. See POINTING, &c.

HAILING, the ſalutation or accoſting of a ſhip at a diſtance, either at ſea or in a harbour. The uſual expreſſion is, Hoa, the ſhip ahoay! To which ſhe anſwers, Holloa! Whence came ye? Where are ye bound? Good voyage! What cheer? All well! How fare ye? &c.

HALIARDS, (*driſſe*, Fr.) the ropes or tackles uſually employed to hoiſt or lower any ſail upon it's reſpective maſts or ſtay. See alſo JEARS.

HAMMOC, (*branle*, Fr.) a piece of canvas, ſix feet long and three feet wide, gathered or drawn together at the two ends, and hung horizontally under the deck, lengthways, for the ſailors to ſleep therein. There are uſually from fourteen to twenty inches in breadth allowed between decks for every hammoc in a ſhip of war: this ſpace however muſt in ſome meaſure depend on the number of the crew, &c. in proportion to the room of the veſſel.

In the time of battle the hammocs, together with their bedding, are all firmly corded, and fixed in the nettings on the quarter-deck, or where-ever the men are too much expoſed to the view or fire of the enemy. See the article ENGAGEMENT.

HANDING *the ſails*, the ſame operation with furling them, which ſee.

HAND-OVER-HAND! (*main avant!* Fr.) the order to the men, who pull upon any rope, to paſs their hands alternately one before the other, or one above the other, if they are hoiſting, in order to haſten the ſervice.

A ſailor is ſaid to go aloft, hand-over-hand, when he aſcends into the tops, &c. by a ſingle rope, as a ſhroud or back-ſtay, without the help of the *rattlings*, by the dexterity of throwing one hand above the other, and lifting his weight along with it.

HANDSPEC, (*enſpec*, Fr.) a wooden bar uſed as a lever to heave about the windlaſs, in order to draw up the anchor from the bottom, particularly in merchant ſhips: for this purpoſe the handle or ſmall end is round and tapering; and the other end is ſquare, in order to conform to the ſhape of the holes in the windlaſs. It is alſo employed as a lever on many other occaſions, as ſtowing the anchors, or proviſions, or cargo, in the ſhip's hold.

Gunner's HANDSPECK, (*renard*, Fr.) an handſpec ſhorter and flatter than the above, and armed with two claws, for the purpoſe of managing the artillery in battle, &c.

HANK FOR HANK, a phraſe expreſſed of two ſhips which *tack* and make a progreſs to windward together. The Dolphin and Cerberus turned up the river *hank for hank*, without being able to get to windward of each other.

HANKS, (*daillots*, Fr.) certain wooden rings fixed upon the ſtays of a ſhip, whereby to confine the ſtay-ſails thereto at different heighths. They are uſed in the place of *grommets*, being a later invention and much more convenient; becauſe, being framed by the bending of a tough piece of wood into the form of a wreath, and faſtened at the two ends by means of notches, they retain their circular figure and elaſticity; whereas the grommets, which are formed of rope, are apt to relax in warm weather and adhere to the ſtays, ſo as to prevent the ſails from being readily hoiſted or lowered.

HARBOUR, (*havre*, Fr.) a general name given to any ſea-port or haven; as alſo to any place convenient for mooring ſhipping, although at a great diſtance from the ſea. The qualities requiſite in a good harbour are, that the bottom be entirely free from rocks or ſhallows; that the opening be of ſufficient extent to admit the entrance or departure of large ſhips, without difficulty; that it ſhould have good anchoring ground, and be eaſy of acceſs; that it ſhould be well defended from the violence of the wind and ſea; that it ſhould have room and convenience to receive the ſhipping of different nations, and thoſe which are laden with different merchandiſes; that it be furniſhed with a good light-houſe, and have variety of proper rings, poſts, moorings, &c. in order to remove or ſecure the veſſels contained therein: and finally, that it have plenty of wood, and other materials for firing, beſides hemp, iron, mariners, &c.

HARD-A-LEE, (*barre à bord, ſous le vent*, Fr.) the ſituation of the helm when it is puſhed cloſe to the *lee* ſide of the ſhip, either to *tack* or keep her head to the wind, when lying by or *trying*: alſo the order to put the helm in this poſition.

HARD-A-WEATHER, (*arrive tout*, Fr.) the order to put the helm cloſe to the weather or windward ſide of the ſhip, in order to bear away. It is likewiſe the poſition of the helm, in conſequence of that order; being in both ſenſes oppoſed to *hard-a-lee*.

HARPINS, the fore-parts of the wales which encompaſs the bow of a ſhip, and are faſtened to the ſtem, being thicker than the after part of the wales, in order to reinforce the ſhip in this place, where ſhe ſuſtains the greateſt ſhock of reſiſtance in plunging into the ſea, or dividing it, under a great preſſure of ſail.

Cat-HARPINS. See CAT-HARPINS.

HARPOON, (*harpon*, Fr.) a ſpear or javelin uſed to ſtrike the whales in the Greenland fiſhery.

The harpoon, which is ſometimes called the harpin-iron, is furniſhed with a long ſtaff, having at one end a broad and flat triangular head ſharpened at both edges, ſo as to penetrate the whale with facility: to the head of this weapon is faſtened a long cord, called the whale-line, which lies carefully *coiled* in the boat, in ſuch a manner, as to run out without being interrupted

interrupted or intangled. As ſoon as the boat has rowed within a competent diſtance of the whale, the harpooner launches his inſtrument; and the fiſh, being wounded, immediately deſcends under the ice with amazing rapidity, carrying the harpoon along with him, and a conſiderable length of the line. Being ſoon exhauſted with the fatigue and loſs of blood, he re-aſcends in order to breathe, where he preſently expires, and floats upon the ſurface of the water, when they approach the carcaſe by drawing in the whale-line.

HATCH, or HATCHWAY, (*ecoutille*, Fr.) a ſquare or oblong opening in the deck of a ſhip, of which there are ſeveral, forming the paſſages from one deck to another, and into the *hold*, or lower apartments. See the DECK, plate III. where A repreſents the main-hatchway of the lower deck; N N, the fore-hatchway; and O O, the after-hatchway.

There are likewiſe hatches of a ſmaller kind, called ſcuttles. See U U in the ſame figure, as alſo the article SCUTTLE.

HATCHES is alſo, although improperly, a name applied by ſailors to the covers or lids of the hatchways.

To HAUL, (*haler*, Fr.) an expreſſion peculiar to ſeamen, implying to pull a ſingle rope, without the aſſiſtance of blocks, or other mechanical powers: when a rope is otherwiſe pulled, as by the application of tackles, or the connection with blocks, &c. the term is changed into *bowſing*. See alſo the articles BOWSE, HOIST, and ROWSING.

To HAUL *the wind*, (*venir au vent*, Fr.) to direct the ſhip's courſe nearer to that point of the compaſs from which the wind ariſes. Thus ſuppoſing a ſhip ſailing ſouth-weſt, with the wind northerly, and ſome particular occaſion renders it neceſſary to haul the wind further to the weſtward; to perform this operation it is neceſſary to arrange the ſails more obliquely with her keel; to brace the yards more forward, by ſlackening the ſtarboard and pulling in the larboard braces, and to haul the lower *ſheets* further aft: and finally, to put the helm a-port, *i. e.* over to the larboard ſide of the veſſel. As ſoon as her head is turned directly to the weſtward, and her ſails are trimmed accordingly, ſhe is ſaid to have hauled the wind four points, that is to ſay, from S. W. to W. She may ſtill go two points nearer to the direction of the wind, by diſpoſing her ſails according to their greateſt obliquity; or, in the ſea-phraſe, by *trimming all ſharp*: and in this ſituation ſhe is ſaid to be cloſe-hauled, as ſailing W. N. W. See the articles CLOSE-HAULED and SAILING.

HAWSE, is generally underſtood to imply the ſituation of the cables before the ſhip's ſtem, when ſhe is moored with two anchors out from forward, viz. one on the ſtarboard, and the other on the larboard *bow*. Hence it is uſual to ſay, She has a clear hawſe, or a foul hawſe. It alſo denotes any ſmall diſtance *a-head* of a ſhip, or between her head and the anchors employed to ride her; as, "He has anchored in our hawſe; the "brig fell athwart our hawſe," &c.

A ſhip is ſaid to ride with a clear hawſe, when the cables are directed to their anchors, without lying athwart the ſtem; or croſſing, or being twiſted round each other, by the ſhip's winding about, according to the change of the wind, tide, or current.

A foul hawſe, on the contrary, implies that the cables lie acroſs the ſtem, or bear upon each other, ſo as to be rubbed and chafed by the motion of the veſſel.

The hawſe accordingly is foul, by having either a croſs, an elbow, or a round turn. If the larboard cable, lying acroſs the ſtem, points out on the ſtarboard ſide, while the ſtarboard cable at the ſame time grows out on the larboard ſide, there is a croſs in the hawſe. If, after this, the ſhip, without returning to her former poſition, continues to wind about the ſame way, ſo as to perform an entire revolution, each of the cables will be twiſted round the other, and then directed out from the oppoſite bow, forming what is called a round turn. An elbow is produced when the ſhip ſtops in the middle of that revolution, after having had a croſs: or, in other words, if ſhe rides with her head northward with a clear hawſe, and afterwards turns quite round ſo as to direct her head northward again, ſhe will have an elbow. See the articles ELBOW and RIDING.

HAWSE-HOLES, (*ecubiers*, Fr.) certain cylindrical holes cut through the bows of a ſhip on each ſide of the ſtem, through which the cables paſs in order to be drawn into, or let out of the veſſel, as occaſion requires. They are repreſented by *dd* in fig. 10. plate IV. being fortified on each ſide by the

HAWSE-PIECES, a name given to the foremoſt timbers of a ſhip, whoſe lower ends reſt upon the knuckle-timber, or the foremoſt of the cant-timbers. They are generally parallel to the ſtem, having their upper ends ſometimes terminated by the lower part of the beak-head; and otherwiſe, by the top of the bow, particularly in ſmall ſhips and merchantmen.

HAWSER, a large rope which holds the middle degree between the *cable* and *tow-line*, in any ſhip whereto it belongs, being a ſize ſmaller than the former, and as much larger than the latter.

HEAD, an ornamental figure erected on the continuation of a ſhip's ſtem, as being expreſſive of her name, and emblematical of war, navigation, commerce, &c.

The heads which have any affinity to war or navigation, are in general either hiſtorical, as referring to ſome of the deities or heroes of antiquity; or allegorical, as alluding to ſome of the natural conſequences of battle, or the virtues moſt eſſential to a life expoſed to perpetual danger. Thus, in the former ſenſe, they repreſent a Neptune, an Alcides; a Mars, an Achilles; a Minerva, or a Jaſon; and in the latter they produce a *Magnanime*, an Intrepid, a Revenge, or a Victory.

The head of a ſhip however has not always an immediate relation to her name, at leaſt in the Britiſh navy. Various inſtances might be produced to ſhew, that our artiſts, as it ſuits their conveniency or judgment, can diſpenſe with this ſuppoſed idea of propriety. Hence we ſometimes obſerve the place of a Jaſon ſupplied by a Medea; or a beaſt of prey made the repreſentative of an illuſtrious lady. The ſame liberty of deſign may therefore, with equal propriety, be allowed to ſymbolize the ſucceſſes of our arms, by a groupe of heterogeneous figures, of ſundry ſhapes and ſizes, according to the artiſt's opinion of their ſuperiority or ſubordination. Their attitude and ſituation, as well as their ſize, muſt accordingly depend, in a great

meaſure, on the ſpace into which they are to be crowded; for although the figures may be of equal importance in themſelves, yet as there is not room for them all, as large as the life, on a ſhip's head, it becomes expedient to diminiſh a few, in order to give place to others. The emblems by which allegorical figures are uſually characterized in painting, poetry, and ſculpture, are not always thought neceſſary in a work of this kind, nor even the poſtures in which theſe figures are exhibited. And indeed, if we reflect with how much labour and application the workman has endeavoured to fill up every vacancy with ſome little figure of a convenient form and ſize, we ought rather to admire his ingenuity than cenſure him for a violation of thoſe general rules of art, by which it is ſuppoſed neceſſary, on ſuch occaſions, to relieve the eye from a ſcene of perplexity and confuſion.

The heads of many of our ſhips of war have undoubtedly great beauty and propriety; and candour muſt acknowledge that ſome of the moſt elegant and judicious have been borrowed from the French deſigns, which are never left to the invention of illiterate mechanics. A multitude of ornaments appears rather unneceſſary in any building calculated for the purpoſes of war. If there be any general rule to determine the ſubjects, and the quantity of ſculpture employed in ſhip-building, it ſeems to be connected with the ideas of dignity and ſimplicity. Theſe too are the genuine characteriſtics of the Grecian and Roman orders of architecture, as oppoſed to that perplexity, and rage for embelliſhment, which peculiarly diſtinguiſh the Gothic. It is hardly poſſible for us to recollect the various diſaſters to which a ſingle hero, or goddeſs, on the head of a ſhip, is expoſed by tempeſtuous weather, battle, and the unexpected encounter of ſhips, without trembling for the havoc and indecency that may happen in an aſſemblage of gods and conc-ſhells, princeſſes and ſatyrs; heroes, blunder-buſſes, ſea-monſters, little children, globes and thunder-bolts, and all the apparatus neceſſary to conſtitute the head of a ſhip of the firſt claſs in our navy.

In plate IV. we have ſketched four heads, which are calculated for veſſels of different ſizes and conſtructions. Fig. 6. exhibits an image of Hercules brandiſhing his club over the heads of Cerberus, calculated for a ſhip of the line. Fig. 7. repreſents Jupiter riding on his eagle, and armed with his thunders, being a ſuitable head for a capital ſhip. The eagle diſplayed by fig. 8. may ſerve for a frigate; and fig. 9. which expreſſes an incumbent dragon, is very proper for any ſmall veſſel with a projecting beak or prow. Theſe figures have been ſelected from many others, becauſe, being very rarely uſed to decorate the head of a ſhip, it is poſſible that ſeveral of our readers may never before have obſerved them. The two firſt, which are uſually called image-heads, are bold, warlike, and claſſical. The eagle in the third is certainly a proper emblem of dignity, force, and velocity: and it is apprehended neither the repreſentation of the latter, nor any other figure in that poſition, are to be met with amongſt our ſhipping.

Head, *(avant*, Fr.) is alſo uſed, in a more enlarged ſenſe, to ſignify the whole front or fore-part of the ſhip, including the bows on each ſide: the

head therefore opens the column of water through which the ſhip paſſes when advancing. Hence we ſay, head-ſails, head-ſea, head-way, &c.

Thus fig. 10. plate IV. repreſents one ſide of the fore-part, or head of a ſeventy-four gun ſhip, together with part of the bow, keel, and gunnel. The names of the ſeveral pieces, exhibited therein, are as follow:

A A Fore part of the keel, with *a a* the two falſe keels beneath it.

A C the ſtem.

a a The cat-head.

b b The ſupporter of the cat-head, (*ſous-barbe*, Fr.)

c c The knight-head, or bollard-timber, of which there is one on each ſide, to ſecure the inner-end of the bowſprit.

d d The hawſe-holes.

e e The navel-hoods, *i. e.* thick pieces of plank laid upon the bow to ſtrengthen the edges of the hawſe-holes.

f The davit-chock, by which the *davit* is firmly wedged while employed to fiſh the anchor.

g The bulk-head, which terminates the forecaſtle on the fore-ſide, being called the beak-head bulk-head by ſhip-wrights.

H The gun-ports of the lower deck.

h The gun-ports of the upper deck and forecaſtle.

I, I, The channels, with their dead-eyes and chain-plates.

i The gripe, or fore-foot, which unites the keel with the ſtem, forming a part of either.

k k Theſe dotted lines repreſent the thickneſs and deſcent of the different decks from the fore-part of the ſhip towards the middle. The loweſt of the three dotted lines *l* expreſſes the convexity of the beams, or the difference between the heighth of the deck in the middle of it's breadth, and at the ſhip's ſide. This is alſo exhibited more clearly in the midſhip-frame, where the real curve of the beam is delineated.

N. B. Theſe lines muſt be always parallel to the lines which terminate the gun-ports above and below.

m m The timbers of the head, and part of the bowſprit.

X The rails of the head which lie acroſs the timbers.

Q Z Fore-part of the main-wale.

R X Fore-part of the channel-wale.

U C The load water-line.

See alſo the continuation of a ſhip throughout her whole length, upon a ſmaller ſcale, plate I. ELEVATION.

Fig. 11. repreſents a head-view of a ſhip, with the projection of her principal timbers, and all her planks laid on one ſide. This figure correſponds to that of the elevation, plate I. and the ſtern-view, fig. 2. plate X.

It is evident that the fore-part of a ſhip is called it's head, from the affinity of motion and poſition it bears to a fiſh, and in general to the horizontal ſituation of all animals whilſt ſwimming.

By the HEAD, the ſtate of a ſhip, which is laden deeper at the fore-end than the after-end.

HEAD-FAST, (*amarre d'avant*, Fr.) a rope employed to faſten a ſhip to a wharf, chain, or buoy, or to ſome other veſſel along-ſide.

HEAD-LAND, (*acrotere*, Fr.) a name frequently given to a cape, or promontory.

HEADMOST, the ſituation of any ſhip or ſhips which are the moſt advanced in a fleet, or line of battle.

HEAD-ROPE, that part of the bolt-rope which terminates any of the principal ſails on the upper-edge, which is accordingly ſewed thereto. See the article BOLT-ROPE.

HEAD-SAILS, (*voiles de l'avant*, Fr.) a general name for all thoſe ſails which are extended on the fore-maſt and bowſprit, and employed to command the fore-part of the ſhip: ſuch are the fore-ſail, fore-top-ſail, fore-top-gallant-ſail, jib, fore-ſtay-ſail, and the ſprit-ſail with it's top-ſail. This term is uſed in oppoſition to *after-ſails*, which ſee.

HEAD-TO-WIND, (*de bout au vent*, Fr.) the ſituation of a ſhip or boat, when her head is turned to windward.

HEAD-WAY, (*ſillage*, Fr.) the motion of advancing at ſea. It is generally uſed when a ſhip firſt begins to advance; or in calm weather, when it is doubtful whether ſhe is in a ſtate of reſt or motion. It is in both ſenſes oppoſed to retreating, or moving with the ſtern foremoſt. See the article STERN-WAY.

HEART, (*moque*, Fr.) a peculiar ſort of dead-eye, ſomewhat reſembling the ſhape of a heart, but differing from the common dead-eyes, inaſmuch as it is only furniſhed with one large hole in the middle, fig. 32. plate II. whereas the common dead-eyes have always three holes. The hearts are principally uſed to contain the *laniards*, by which the ſtays are extended. See DEAD-EYE.

HEAVER, a name given by ſeamen to a wooden ſtaff, employed by them as a lever on many occaſions; particularly in ſetting up the top-maſt-ſhrouds, fraping the top-maſts, ſtroping the larger blocks, ſeizing the ſtanding rigging, &c. See thoſe articles.

HEAVING, (*virer*, Fr. *heafian*, Sax.) the act of turning about a *capſtern*, *windlaſs*, or other machine of the like kind, by means of bars or handſpecs.

HEAVING *the lead*. See the article SOUNDING.

HEAVING *a-head*, is advancing the ſhip by heaving-in the cable, or other rope, which is faſtened to an anchor at ſome diſtance before her. To heave a-ſtern is therefore to draw the ſhip backwards by the ſame operation.

HEAVING-*down*. See the article CAREENING,

HEAVING-*out*, the act of unfurling and throwing looſe a ſail from the place where it had been rolled and faſtened. This phraſe is more particularly applied to the ſtay-ſails: thus we ſay, "Looſe the top-ſails, and heave "out the ſtay-ſails!" which is accordingly done, either to *ſet* or *dry* them.

HEAVING-*ſhort*, is the drawing ſo much of the cable into the ſhip, by means of the capſtern or windlaſs, as that by advancing, ſhe will be almoſt perpendicularly above the anchor, and in a proper ſituation to ſet ſail.

HEAVING-*taught*, the act of heaving about the capſtern, till the rope applied thereto becomes ſtraight and ready for action.

HEEL, (*talon*, Fr.) a name uſually given to the after-end of a ſhip's keel; as alſo to the lower end of the ſtern-poſt, to which it is firmly connected.

HEEL *of a maſt*, the lower end, which is diminiſhed into the fruſtum of a pyramid, ſo as to ſink immoveably into a hole of the ſame ſhape, cut in the ſtep, which is attached to the ſhip's keel.

HEEL *of a top-maſt*, the lower end, which is ſuſtained upon the *treſtle-trees* by means of an iron bar, called the ſide. See the article MAST.

To HEEL, (*carguer*, Fr.) to ſtoop or incline to either ſide. It is uſually applied to a ſhip when ſhe is forced into this poſition by the wind acting upon her ſails, while braced obliquely acroſs her; or by being ballaſted ſo as to lean more to one ſide than the other. See the articles CRANK, STIFF, and TRIM.

HELM, (*gouvernail*, Fr. *helma*, Sax.) a long and flat piece of timber, or an aſſemblage of ſeveral pieces, ſuſpended along the hind part of a ſhip's ſtern-poſt, where it turns upon hinges to the right or left, ſerving to direct the courſe of the veſſel, as the tail of a fiſh guides the body.

The helm is uſually compoſed of three parts, viz. the rudder, the tiller, and the wheel, except in ſmall veſſels, where the wheel is unneceſſary.

The length and breadth of the rudder are repreſented in plate VIII. where it is evident that it becomes gradually broader in proportion to it's diſtance from the top, or to it's depth under the water. The *back*, or inner part of it, which joins to the ſtern-poſt, is diminiſhed into the form of a wedge throughout it's whole length, ſo as that the rudder may be more eaſily turned from one ſide to the other, where it makes an obtuſe angle with the keel. The hinges upon which it is ſupported are alſo expreſſed in this figure. Thoſe which are bolted round the ſtern-poſt to the after extremity of the ſhip, are called googings, and are furniſhed with a large hole on the after-part of the ſtern-poſt. The other parts of the hinges, which are bolted to the back of the rudder, are called pintles, being ſtrong cylindrical pins, which enter into the googings, and reſt upon them. The length and thickneſs of the rudder is nearly equal to that of the ſtern-poſt, as repreſented in fig. 1. plate X.

The rudder is turned upon it's hinges by means of a long bar of timber, called the tiller, which is fixed horizontally in it's upper end within the veſſel. The movements of the tiller to the right and left, accordingly, direct the efforts of the rudder to the government of the ſhip's courſe as ſhe advances, which, in the ſea-language, is called ſteering. The operations of the tiller are guided and aſſiſted by a ſort of tackle, communicating with the ſhip's ſide, called the tiller-rope, which is uſually compoſed of untarred rope-yarns, for the purpoſe of traverſing more readily through the blocks or pullies.

In order to facilitate the management of the helm, the tiller-rope, in all large veſſels, is wound about a wheel, which acts upon it with the powers of a crane or windlaſs. The rope employed in this ſervice being conveyed from the fore-end of the tiller *k*, to a ſingle block *i*, on each ſide of the ſhip, (plate III. DECK) is further communicated to the wheel, by means of two blocks,

blocks, ſuſpended near the mizen-maſt, and two holes immediately above, leading up to the wheel, which is fixed upon an axis, on the quarter-deck, almoſt perpendicularly over the fore end of the tiller. Five turns of the tiller-rope are uſually wound about the barrel of the wheel, and, when the helm is amidſhip, the middle turn is nailed to the top of the barrel, with a mark by which the helmſman readily diſcovers the ſituation of the helm, as the wheel turns it from the ſtarboard to the larboard ſide. The ſpokes of the wheel generally reach about eight inches beyond the rim or circumference, ſerving as handles to the perſon who ſteers the veſſel. As the effect of a lever increaſes in proportion to the length of it's arm, it is evident that the power of the helmſman, to turn the wheel, will be increaſed according to the length of the ſpokes, beyond the circumference or the barrel.

When the helm, inſtead of lying in a right line with the keel, is turned to one ſide or the other, as in B D, fig. 1. plate V. it receives an immediate ſhock from the water, which glides along the ſhip's bottom in running *aft* from A to B: and this fluid puſhes it towards the oppoſite ſide, whilſt it is retained in this poſition: ſo that the ſtern, to which the rudder is confined, receives the ſame impreſſion, and accordingly turns from B to *b* about ſome point *c*, whilſt the head of the ſhip paſſes from A to *a*. It muſt be obſerved, that the current of water falls upon the rudder obliquely, and only ſtrikes it with that part of it's motion which acts according to the ſine of incidence, puſhing it in the direction N P, with a force which not only depends on the velocity of the ſhip's courſe, by which this current of water is produced, but alſo upon the extent of the ſine of incidence. This force is by conſequence compoſed of the ſquare of the velocity with which the ſhip advances, and the ſquare of the ſine of incidence, which will neceſſarily be greater or ſmaller according to circumſtances; ſo that if the veſſel runs three or four times more ſwiftly, the abſolute ſhock of the water upon the rudder will be nine or ſixteen times ſtronger under the ſame incidence: and, if the incidence is increaſed, it will yet be augmented in a greater proportion, becauſe the ſquare of the ſine of incidence is more enlarged. This impreſſion, or, what is the ſame thing, the power of the helm, is always very feeble, when compared with the weight of the veſſel; but as it operates with the force of a long lever, it's efforts to turn the ſhip are extremely advantageous. For the helm being applied to a great diſtance from the center of gravity, G, or from the point about which the veſſel turns horizontally, if the direction P N of the impreſſion of the water upon the rudder be prolonged, it is evident that it will paſs perpendicularly to R, widely diſtant from the center of gravity G: thus the abſolute effort of the water is very powerful. It is not therefore ſurprizing that this machine impreſſes the ſhip with a conſiderable circular movement, by puſhing the ſtern from *B* to *b*, and the head from A to *a*; and even much further, whilſt ſhe ſails with rapidity: becauſe the effect of the helm always keeps pace with the velocity with which the veſſel advances *.

* Bourdé, Manœuvrier.

Amongſt

Amongſt the ſeveral angles that the rudder makes with the keel, there is always one poſition more favourable than any of the others, as it more readily produces the deſired effect of turning the ſhip, in order to change her courſe. To aſcertain this, it muſt be conſidered, that if the obliquity of the rudder with the keel is greater than the obtuſe angle A B D, ſo as to diminiſh that angle, the action of the water upon the rudder will increaſe, and at the ſame time oppoſe the courſe of the ſhip in a greater degree; becauſe the angle of incidence will be more open, ſo as to preſent a greater ſurface to the ſhock of the water, by oppoſing it's paſſage more perpendicularly. But at that time the direction N P of the effort of the helm upon the ſhip will paſs, with a ſmaller diſtance from the center of gravity G towards R, and leſs approach the perpendicular N L, according to which it is abſolutely neceſſary that the power applied ſhould act with a greater effect to turn the veſſel. Thus it is evident that if the obtuſe angle A B D is too much incloſed, the greateſt impulſe of the water will not counterbalance the loſs ſuſtained by the diſtance of the direction N P from N L; or by the great obliquity, which is given to the ſame direction N P of the abſolute effort of the helm with the keel A B. If, on the contrary, the angle A B D is too much opened, the direction N P of the force of action of the helm will become more advantageous to turn the veſſel, becauſe it will approach nearer the perpendicular N L; ſo that the line prolonged from N P will increaſe the line G R, by removing R to a greater diſtance from the center of gravity G: but then the helm will receive the impreſſion of the water too obliquely, for the angle of incidence will be more acute; ſo that it will only preſent a ſmall portion of it's breadth to the ſhock of the water, and by conſequence will only receive a feeble effort. By this principle it is eaſy to conceive, that the greateſt diſtance G R from the center of gravity G is not ſufficient to repair the diminution of force occaſioned by the too great obliquity of the ſhock of the water. Hence we may conclude, that when the water either ſtrikes the helm too directly, or too obliquely, it loſes a great deal of the effect it ought to produce. Between the two extremes there is therefore a mean poſition, which is the moſt favourable to it's operations.

The diagonal N P of the rectangle I L repreſents the abſolute direction of the effort of the water upon the helm. N I expreſſes the portion of this effort which is oppoſed to the ſhip's head-way, or which puſhes her aſtern, in a direction parallel to the keel. It is eaſily perceived that this part N I of the whole power of the helm contributes but little to turn the veſſel; for if I N is prolonged, it appears that it's direction approaches to a very ſmall diſtance G V from the center of gravity G, and that the arm of the lever B N = G V, to which the force is applied, is not in the whole more than equal to half the breadth of the rudder: but the relative force N L, which acts perpendicular to the keel, is extremely different. If the firſt N I is almoſt uſeleſs, and even pernicious, by retarding the velocity; the ſecond N L is capable of a very great effect, becauſe it operates at a conſiderable diſtance from the center of gravity G of the ſhip, and acts upon the arm of

a lever G E, which is very long. Thus it appears, that between the effects N L and N I, which refult from the abſolute effort N P there is one which always oppoſes the ſhip's courſe, and contributes little to her motion of turning; whilſt the other produces only this movement of rotation, without operating to retard her velocity *.

Geometricians have determined the moſt advantageous angle made by the helm with the line prolonged from the keel, and fixed it at 54° 44′ preſuming that the ſhip is as narrow at her floating-line, or at the line deſcribed by the ſurface of the water round her bottom, as at the keel. But as this ſuppoſition is abſolutely falſe, inaſmuch as all veſſels augment their breadth from the keel upward to the extreme breadth, where the floating-line or the higheſt water-line is terminated; it follows that this angle is too large by a certain number of degrees. For the rudder is impreſſed by the water, at the heighth of the floating-line, more directly than at the keel, becauſe the fluid exactly follows the horizontal outlines of the bottom; ſo that a particular poſition of the helm might be ſuppoſed neceſſary for each different incidence which it encounters from the keel upwards. But as a middle poſition may be taken between all theſe points, it will be ſufficient to conſider the angle formed by the ſides of the ſhip, and her *axis*, or the middle-line of her length, at the ſurface of the water, in order to determine afterwards the mean point, and the mean angle of incidence.

It is evident that the angle 54° 44′ is too open, and very unfavourable to the ſhip's head-way, becauſe the water acts upon the rudder there with too great a ſine of incidence, as being equal to that of the angle which it makes with the line prolonged from the keel below: but above, the ſhock of the water is almoſt perpendicular to the rudder, becauſe of the breadth of the bottom, as we have already remarked. If then the rudder is only oppoſed to the fluid, by making an angle of 45° with the line prolonged from the keel, the impreſſion, by becoming weaker, will be leſs oppoſed to the ſhip's head-way, and the direction N P. fig. 1. plate V. of the abſolute effort of the water upon the helm drawing nearer to the lateral perpendicular, will be placed more advantageouſly, for the reaſons above-mentioned †. On the other hand, experience daily teſtifies, that a ſhip ſteers well when the rudder makes the angle D B E equal to 35° only.

It has been already remarked, that the effect of moving the wheel to govern the helm increaſes in proportion to the length of the ſpokes; and ſo great is the power of the wheel, that if the helmſman employs a force upon it's ſpokes equivalent to thirty pounds, it will produce an effect of 90 or 120 pounds upon the tiller. On the contrary, the action of the water is collected into the middle of the breadth of the rudder, which is very narrow in compariſon with the length of the tiller; ſo the effort of the water is very little removed from the fulcrum B upon which it turns; whereas the tiller forms the arm of a lever ten or fifteen times longer, which alſo increaſes

* Bourdé, Manœuvrier.

† Bouguer, Traité de la Manœuvre de Vaiſſeaux. Bourdé, Manœuvrier.

the power of the helmſman in the ſame proportion that the tiller bears to the lever upon which the impulſe of the water is directed. This force then is by conſequence ten or fifteen times ſtronger, and the effort of 30 pounds, which at firſt gave the helmſman a power equal to 90 or 120 pounds, becomes accumulated to one of 900 or 1800 pounds upon the rudder. This advantage then ariſes from the ſhortneſs of the lever upon which the action of the water is impreſſed, and the great comparative length of the tiller, or lever, by which the rudder is governed; together with the additional power of the wheel that directs the movements of the tiller, and ſtill further accumulates the power of the helmſman over it. Such a demonſtration ought to remove the ſurprize with which the prodigious effect of the helm is ſometimes conſidered, from an inattention to it's mechaniſm: for we need only to obſerve the preſſure of the water, which acts at a great diſtance from the center of gravity G, about which the ſhip is ſuppoſed to turn, and we ſhall eaſily perceive the difference there is between the effort of the water againſt the helmſman, and the effect of the ſame impulſe againſt the veſſel. With regard to the perſon who ſteers, the water acts only with the arm of a very ſhort lever N B, of which B is the fulcrum: on the contrary, with regard to the ſhip, the force of the water is impreſſed in the direction N P, which paſſes to a great diſtance from G, and acts upon a very long lever E G, which renders the action of the rudder extremely powerful in turning the veſſel; ſo that, in a large ſhip, the rudder receives a ſhock from the water of 2700 or 2800 pounds, which is frequently the caſe, when ſhe ſails at the rate of three or four leagues by the hour; and this force being applied in E, perhaps 100 or 110 feet diſtant from the center of gravity G, will operate upon the ſhip, to turn her about, with 270000 or 308000 pounds; whilſt, in the latter caſe, the helmſman acts with an effort which exceeds not 30 pounds upon the ſpokes of the wheel.

After what has been ſaid of the helm it is eaſy to judge, that the more a ſhip increaſes her velocity with regard to the ſea, the more powerful will be the effect of the rudder, becauſe it acts againſt the water with a force which increaſes as the ſquare of the ſwiftneſs of the fluid, whether the ſhip advances or retreats; or, in other words, whether ſhe has head-way or ſtern-way; with this diſtinction, that in theſe two circumſtances the effects will be contrary. For if the veſſel retreats, or moves aſtern, the helm will be impreſſed from I to N, fig. 1. plate V. and inſtead of being puſhed, according to N P, it will receive the effort of the water from N towards R; ſo that the ſtern will be tranſported according to the ſame movement, and the head turned in a contrary direction.

When the helm operates by itſelf, the center of rotation of the ſhip and her movement are determined by eſtimating the force of this machine; that is to ſay, by multiplying the ſurface of the rudder by the ſquare of the ſhip's velocity *. See the articles RUDDER, SAILING, STEERING, TRIM, and WORKING.

* Saverien, Dict. Marine.

HIGH AND DRY, a phraſe which implies the ſituation of a ſhip, when ſhe has run aground, ſo as to be ſeen dry upon the ſtrand.

HIGH WATER, (*haute marée*, Fr.) the greateſt heighth of the flood-tide. See FLOOD and TIDE.

HITCH, (*clef*, Fr.) a ſort of knot or nooſe, by which one rope is faſtened to another, or to ſome other object, as a poſt, ring, timber-head, maſt, &c. Hence we ſay an half-hitch, *demi-clef*, a clove-hitch, a rolling-hitch, &c. See BEND and KNOT.

HOASE, or HOSE, (*manche pour l'eau*, Fr.) a long flexible tube, formed of leather or tarred canvas, but chiefly of the latter, and employed to conduct the freſh water, which is hoiſted aboard a ſhip, into the caſks that are ranged in the hold; and to paſs the water, or other liquors, out of one caſk into another. For the latter uſe, one of the ends or openings of the hoaſe is fixed in the empty caſk, whilſt the other is applied to the pump that extracts the water out of the full one. This exerciſe is, on ſome occaſions, neceſſary to alter or preſerve the trim of the veſſel, without diſturbing her ſtowage.

HOG, (*goret*, Fr.) a ſort of flat ſcrubbing-broom, ſerving to ſcrape off the filth from a ſhip's bottom, under water, particularly in the act of *boot-topping*, which ſee.

This inſtrument is formed by incloſing a multitude of ſhort twigs of birch, or ſuch wood, between two pieces of plank, which are firmly attached to each other, after which the ends of the twigs or branches are cut off even, ſo as to form a ſort of bruſh of conſiderable ſtrength. To this machine is fitted a long ſtaff, together with two ropes, the former of which is uſed to thruſt the hog under the ſhip's bottom, and the latter to guide, and pull it up again cloſe to the planks thereof, ſo as to rub off all the filth effectually. This exerciſe is uſually performed in the ſhip's boat, which is accordingly confined as cloſe as poſſible to the veſſel's ſide during the operation, and ſhifted from one part of the ſide to another, till the whole is completed.

HOIST, (*guidant*, Fr.) the perpendicular heighth of a flag or enſign, as oppoſed to the *fly*, which implies it's breadth from the ſtaff to the outer edge.

HOISTING, (*hiſſer*, Fr.) the operation of drawing up any body by the aſſiſtance of one or more tackles, according to the weight intended to be raiſed. See the article TACKLE.

The act of pulling up any body, by the help of a ſingle block only, is never expreſſed by the term *hoiſting*, if we except the exerciſe of extending the ſails, by drawing them upwards along the maſts or ſtays, to which it is invariably applied. See alſo TRACING-UP and WHIPPING.

HOLD, (*cale*, Fr.) the whole interior cavity or belly of a ſhip, or all that part of her inſide, which is comprehended between the floor and the lower-deck, throughout her whole length.

This capacious apartment uſually contains the ballaſt, proviſions, and ſtores of a ſhip of war, and the principal part of the cargo in a merchantman. The diſpoſition of thoſe articles, with regard to each other, &c. neceſſarily falls under our conſideration in the article STOWAGE; it ſuffices in this place

to ſay, that the places where the ballaſt, water, proviſions, and liquors are ſtowed, are known by the general name of the hold. The ſeveral ſtore-rooms are ſeparated from each other by *bulk-heads*, and are denominated according to the articles which they contain, the ſail-room, the bread-room, the fiſh-room, the ſpirit-room, &c.

To trim the HOLD. See the article TRIM.

After-HOLD, a general name given to all that part of the hold which lies abaft the main-maſt.

Fore-HOLD, that part of the hold which is ſituated in the fore-part of the ſhip, or before the main hatch-way.

HOLD, in navigation, is generally underſtood to ſignify a particular ſituation of a ſhip with regard to the ſhore, by which ſhe is enabled to keep within a ſufficient diſtance, to facilitate her courſe, or anſwer ſome other important object. Hence we ſay, Keep a good hold of the land! or, Keep the ſhore well aboard! which are ſynonymous phraſes, implying to keep near, or in ſight of the land.

HOLDING-*on*, the act of pulling back the hind part of any cable, or other rope, which is heaved round, by the capſtern or windlaſs, or drawn in by the purchaſe of a tackle. See CAPSTERN, &c.

To have a clearer idea of this exerciſe, it is neceſſary to premiſe, that there are ſeldom or never more than three turns of any rope paſſed about the barrel of the capſtern, when it is employed in heaving; becauſe a great number of turns of a large rope would ſoon cover the whole barrel, and utterly deſtroy the effect of this motion, till thoſe turns could be removed; a circumſtance which might be attended with very bad conſequences. On the contrary, when there are only a few turns, the capſtern or windlaſs is always kept ſufficiently clear for action; for it is evident, that every revolution of either will heave-in a quantity of the rope, upon which it is employed, equal to the circumference of it's barrel. Now as there are only a few turns upon the barrel at once, an equal quantity of the rope will neceſſarily come off from the capſtern at the ſame time; and this is accordingly pulled back as ſtrongly as poſſible, to prevent it from *ſurging* or jerking round the barrel, by being held too looſely. This is called *holding-on*, which therefore may be defined, the act of retaining any quantity of rope, acquired by the effort of a capſtern, windlaſs, or tackle; as being employed in hoiſting as well as heaving.

HOLDING-*water*, the operation of ſtopping a boat in her courſe, by holding the oars in the water, and bearing the blade, or flat part, ſtrongly againſt the current made *along-ſide*, by her paſſing ſwiftly through the water. See BACK-ASTERN, OAR, and ROWING.

HOLLOA! *(commande!* Fr.) an exclamation of anſwer, to any perſon, who calls to another to aſk ſome queſtion, or to give a particular order. Thus, if the maſter intends to give any order to the people in the main-top, he previouſly calls, Main-top, hoay! To which they anſwer, Holloa! to ſhew that they hear him, and are ready. It is alſo the firſt anſwer in hailing a ſhip at a diſtance. See HAILING.

HOME, in a naval ſenſe, either implies the ſituation of ſome object, where it retains it's full force of action; or where it is properly lodged for convenience or ſecurity. In the former ſenſe it is applied to the ſails; and in the latter, it uſually refers to the ſtowage of the hold, or the anchors.

When it is expreſſed of the ſails, it denotes that their *clues*, or lower corners, are cloſe to the blocks upon the yard-arm, immediately beneath them; it is therefore underſtood only of the loftier ſails, as the top-ſails, top-gallant-ſails, and the ſtudding-ſails thereto belonging. Hence to haul home the top-ſail ſheets, is to extend the bottom of the top-ſail to the lower-yard, by means of the ſheets. See CLUE and SHEET.

In the ſtowage of the hold, &c. a caſk, bale, or caſe, is ſaid to be *home*, when it bears againſt, or lies cloſe to ſome other object, without leaving any interval between; and indeed the ſecurity, or firmneſs of the ſtowage, greatly depends on this circumſtance.

HOME, when ſpoken of the anchor, ſeems to imply the ſtation of the ſhip, with regard to her anchor; which is accordingly ſaid to come home when it looſens from the ground, by the effort of the cable, and approaches the place where the ſhip floated, at the length of her moorings. See the article ANCHOR.

HOMMOC, (*tertre*, Fr.) a name given by mariners to a hilloc, or ſmall eminence of land reſembling the figure of a cone, and appearing on the ſea-coaſt of any country.

HOOD, (*trémue*, Fr.) a ſort of low wooden porch, reſembling the *companion*, and placed over the ſtair-caſe or ladder, which leads into the ſteerage or apartments, where the crew generally reſide in a merchant-ſhip. The uſe of the hood is to admit the air and light, and at the ſame time prevent the rain from falling into the ſteerage.

HOOK, a crooked piece of iron, of which there are ſeveral of different ſhapes and ſizes uſed at ſea, as boat-hooks, can-hooks, cat-hooks, fiſh-hooks, foot-hooks, &c. See the articles BOAT-HOOK, CAN-HOOK, &c.

HORSE, (*marche-pied*, Fr.) a rope reaching from the middle of a yard to it's extremity, or what is called the yard-arm, and depending about two or three feet under the yard, for the ſailors to tread upon, whilſt they are looſing, reefing or furling the ſails, rigging out the ſtudding-ſail booms, &c. In order therefore to keep the horſe more parallel to the yard, it is uſually ſuſpended thereto, at proper diſtances, by certain ropes called *ſtirrups*, which hang about two feet under the yard, having an eye in their lower ends through which the horſe paſſes. See the article RIGGING.

HORSE is alſo a thick rope, extended in a perpendicular direction near the *fore* or *after*-ſide of a maſt, for the purpoſe of hoiſting or extending ſome ſail thereon. When it is fixed before a maſt, it is calculated for the uſe of a ſail called the *ſquare-ſail*, whoſe yard being attached to the horſe, by means of a *traveller*, or *bull's-eye*, which ſlides up and down occaſionally, is retained in a ſteady poſition, either when the ſail is ſet, or whilſt it is hoiſting or lowering. When the horſe is placed *abaft* or behind a maſt, it is intended for the *try-ſail* of a ſnow, and is accordingly very rarely fixed in this

this poſition, except in thoſe ſloops of war which occaſionally aſſume the form of ſnows, in order to deceive the enemy.

HORSE, (*baudet*, Fr.) a ſawyer's frame or treſtle.

HOUNDS, a name given to thoſe parts of a maſt-head, which gradually project on the right and left ſide, beyond the cylindrical or conical ſurface, which it preſerves from the *partners* upwards. The hounds, whoſe upper parts are alſo called *cheeks*, are uſed as ſhoulders to ſupport the frame of the top, together with the top-maſt and the rigging of the lower-maſt. See the article MAST.

HOUSED, (*à la ſerre*, Fr.) the ſituation of the great guns of a ſhip, when they are ſecured at ſea by their tackles and breechings. See CANNON.

HOWKER, a veſſel in the Dutch marine, commonly navigated with two maſts, viz. a main-maſt and a mizen-maſt, and being from ſixty to upwards of two hundred tons in burthen.

HOUSING, or HOUSE-LINE, a ſmall line, formed of three fine ſtrands, or twiſts of hemp, ſmaller than rope-yarn. It is chiefly uſed to *ſeize* blocks into their ſtrops, to bind the corners of the ſails, or to faſten the bottom of a ſail to it's bolt-rope, &c. See BOLT-ROPE.

HOY, a ſmall veſſel, chiefly uſed in coaſting, or carrying goods to or from a ſhip, in a road or bay, where the ordinary lighters cannot be managed with ſafety or convenience.

It would be very difficult to deſcribe, preciſely, the marks of diſtinction between this veſſel and ſome others of the ſame ſize, which are alſo rigged in the ſame manner; becauſe what is called a *hoy* in one place, would aſſume the name of a *ſloop* or *ſmack* in another: and even the people, who navigate theſe veſſels, have, upon examination, very vague ideas of the marks by which they are diſtinguiſhed from thoſe above mentioned. In Holland, the hoy has two maſts; in England it has but one, where the main-ſail is ſometimes extended by a boom, and ſometimes without it. Upon the whole, it may be defined a ſmall veſſel, uſually rigged as a ſloop, and employed for carrying paſſengers and luggage from one place to another, particularly on the ſea-coaſt.

HULK, an old ſhip of war, fitted with an apparatus, to fix or take out the maſts of his majeſty's ſhips, as occaſion requires.

The maſt of this veſſel *a a* fig. 2. plate V. is extremely high, and withal properly ſtrengthened by *ſhrouds* and *ſtays*, in order to ſecure the ſheers, (*machine à mater*, Fr.) which ſerve, as the arm of a crane, to hoiſt out or in the maſts of any ſhip lying alongſide. The ſheers, *b b*, are compoſed of ſeveral long maſts, whoſe heels reſt upon the ſide of the hulk, and having their heads declining outward from the perpendicular, ſo as to hang over the veſſel whoſe maſts are to be fixed or diſplaced. The tackles, *c c*, which extend from the head of the maſt to the ſheer-heads, are intended to pull in the latter towards the maſt-head, particularly when they are charged with the weight of a maſt after it is raiſed out of any ſhip, which is performed by ſtrong tackles depending from the ſheer-heads. The effort of theſe tackles is produced by two capſterns, fixed on the deck for this purpoſe.

HULK is alſo a name beſtowed on any old veſſel laid by, as unfit for further ſervice: it is probably derived from the ὁλκάδες, or veſſels of burthen of the ancient Grecians.

HULL, (*corps d'un vaiſſeau*, Fr.) the frame, or body of a ſhip, excluſive of her maſts, yards, ſails, and rigging: it is uſually expreſſed of a ſhip either before ſhe is furniſhed with maſts, &c. or after ſhe is diſmatted and ſtripped of the aforeſaid machinery.

To HULL *a ſhip*, is to fire cannon-balls into her hull within the point-blank range.

HULL-*to*, the ſituation of a ſhip when ſhe is *trying a-hull*, or with all her ſails furled; as in trying. See the article TRYING.

HURRICANE, (*ouragan*, Fr. *huracan*, Span.) a violent and prodigious tempeſt, occaſioned by the collection and oppoſition of ſeveral winds, that ſometimes blow from one quarter and ſometimes from another, producing a dangerous agitation in the ſea, where the waves break, and daſh againſt each other with aſtoniſhing fury. On the approach of a hurricane, the ſea and air become perfectly calm and motionleſs, without a breath of wind ſtirring either. Soon after this the ſky is darkened, the clouds accumulate, and the light of the day is replaced by terrible flaſhes of lightening. The hurricanes often laſt abundantly long, and are uſually accompanied with many fatal accidents *. During the continuance of this general calamity, the veſſels which were anchored in the roads frequently cut their cables and put to ſea, where they drive at the mercy of the winds and waves, after having ſtruck their yards and top-maſts.

The hurricanes are more uſual between the tropics, particularly in the Atlantic ocean, than to the northward or ſouthward of the torrid zone.

* Aubin. Saverien.

J.

JACK, a ſort of flag or colours, diſplayed from a maſt erected on the outer end of a ſhip's bowſprit. In the Britiſh navy the jack is nothing more than a ſmall union flag, compoſed of the interſection of the red and white croſſes; but in merchant-ſhips this union is bordered with a red field. See the article UNION.

JACOB's STAFF, *(baton aſtronomique*, Fr.) an inſtrument formerly uſed to take altitudes at ſea.

JAMMING, the act of incloſing any object between two bodies, ſo as to render it immoveable, whilſt they continue in the ſame poſition. This expreſſion is uſually applied to the ſituation of ſome running-rope, when it happens to be ſqueezed by the compreſſion of the ſtanding-rigging, &c. and by conſequence incapable of performing it's office, by traverſing in the blocks, till it is releaſed from this confinement. In this ſenſe jamming is oppoſed to *rendering*, which ſee.

A caſk, box, &c. is alſo ſaid to be jammed, when it is in the ſame manner wedged in between weighty bodies, ſo as not to be diſlodged without great difficulty.

JEARS, or GEERS, *(driſſe*, Fr.) an aſſemblage of tackles, by which the lower yards of a ſhip are hoiſted up along the maſt to their uſual ſtation, or lowered from thence as occaſion requires; the former of which operations is called *ſwaying*, and the latter, *ſtriking*. See thoſe articles.

In a ſhip of war, the jears are uſually compoſed of two ſtrong tackles, each of which has two blocks, viz. one faſtened to the lower maſt head, and the other to the middle of the yard. The two blocks which are *laſhed* to the middle, or *ſlings* of the yard, are retained in this ſituation by means of two cleats, nailed on each ſide, whoſe arms encloſe the ropes by which the blocks are faſtened to the yard. The two ropes, which communicate with theſe tackles, lead down to the deck on the oppoſite ſide of the maſt, according to the ſituation of the upper jear-blocks.

The jears, in merchant-ſhips, have uſually two large ſingle blocks on the oppoſite ſide of the maſt-head, and another of the ſame ſize in the middle of the yard. The rope which communicates with theſe paſſes through one of the blocks hanging at the maſt-head, then through the block on the yard, and afterwards through the other hanging-block upon the maſt. To the two lower ends of this rope, on the oppoſite ſides of the maſt, are fixed two tackles, each of which is formed of two double blocks, the lower one being hooked to a ring-bolt in the deck, and the upper one ſpliced, or ſeized, into the lower end of the great rope above, which is called the tye. By this

this contrivance the mechanical power of the tackle below is tranſmitted to the tye, which, communicating with blocks on the yard, readily *ſways-up*, or lowers it, either by the effort of both jears at once, on the oppoſite ſides of the maſt, or by each of them ſeparately, one after the other.

JETTY-HEAD, a name uſually given, in the royal dock-yards, to that part of a wharf which projects beyond the reſt; but more particularly the front of a wharf, whoſe ſide forms one of the cheeks of a dry or wet dock.

JEWEL-BLOCKS, a name given to two ſmall blocks, which are ſuſpended at the extremity of the main and fore-top-ſail-yards, by means of an eye-bolt, driven from without into the middle of the yard-arm, parallel to it's axis. The uſe of theſe blocks is to retain the upper-part of the top-maſt ſtudding-ſails beyond the ſkirts of the top-ſails, ſo that each of thoſe ſails may have it's full force of action, which would be diminiſhed by the incroachment of the other over its ſurface. The *haliards*, by which thoſe ſtudding-ſails are hoiſted, are accordingly paſſed through the jewel-blocks; whence, communicating with a block on the top-maſt-head, they lead downwards to the top or decks, where they may be conveniently hoiſted. See the article SAIL.

JIB, (*foc*, Fr.) the foremoſt ſail of a ſhip, being a large ſtay-ſail extended from the outer end of the bowſprit, prolonged by the jib-boom, towards the fore-top-maſt-head. See SAIL.

The jib is a ſail of great command with any ſide-wind, but eſpecially when the ſhip is *cloſe-hauled*, or has the wind upon her beam; and it's effort in *caſting* the ſhip, or turning her head to leeward is very powerful, and of great utility, particularly when the ſhip is *working* through a narrow channel. See SAILING.

JIB-BOOM, a boom run out from the extremity of the bowſprit, parallel to it's length, and ſerving to extend the bottom of the jib, and the ſtay of the fore-top-gallant-maſt. This boom, which is nothing more than a continuation of the bowſprit forward, to which it may be conſidered as a top-maſt, is uſually attached to the bowſprit by means of two large boom-irons, (ſee the article IRON-WORK) or by one boom-iron, and a *cap* on the outer-end of the bowſprit; or, finally, by the cap without, and a ſtrong laſhing within, inſtead of a boom-iron; which is generally the method of ſecuring it in ſmall merchant-ſhips. It may therefore be drawn in upon the bowſprit as occaſion requires, which is uſually practiſed when the ſhip enters a harbour, where it might very ſoon be broke, or carried away, by the veſſels which are moored therein, or paſſing by under ſail.

JIBING. See GYBING.

JIGGER, a machine, conſiſting of a piece of rope about five feet long, with a block at one end and a ſheave at the other; and uſed to *hold-on* the cable, when it is heaved into the ſhip by the revolution of the *windlaſs*. See HOLDING-ON.

The jigger is particularly uſeful when the cable is either ſlippery with mud or ooze, or when it is ſtiff and unweidly; in both of which caſes it is very difficult to ſtretch it back from the windlaſs by hand, which however is

done with facility and expedition, by means of the jigger, as follows : the end of the rope, to which the ſheave is faſtened by a knot, is paſſed round the cable cloſe to the windlaſs, and the hind part of the rope, coming over the ſheave, is ſtretched aft by means of another rope paſſing through the jigger-block. As ſoon as the laſt rope is extended, the turn of the former about the cable is firmly retained in its poſition, by the compreſſion of it's hind part under the ſheave, acting upon what may be called the neck of the jigger. But as the cable continues to be heaved into the ſhip, it is evident that the jigger, which is faſtened on a particular part thereof, ſtretching it back, will be removed further aft, by every turn of the windlaſs, and the effort of the jigger will be leſſened in proportion to it's diſtance from the windlaſs: this circumſtance renders it neceſſary to *fleet* or replace it, in a proper ſtate of action, as occaſion requires. The man who performs this office accordingly calls out, *fleet jigger !* one of the men, at the windlaſs, inſtantly fixes his handſpec between the deck and the cable, ſo as to *jam* the latter to the windlaſs, and prevent it from running out till the jigger is re-fixed.

JIGGER-TACKLE, a light ſmall tackle, conſiſting of a double and ſingle block, and uſed on ſundry occaſions by ſeamen. See TACKLE.

IN (*dedans*, Fr.) the ſtate of any of a ſhip's ſails, when they are furled or ſtowed. It is uſed in this ſenſe alſo in oppoſition to *out*, which implies that they are *ſet*, or extended to aſſiſt the ſhip's courſe.

INSURANCE, (*aſſurance*, Fr.) a certain contract, by which an individual, or company, agrees to indemnify whatever loſſes or damages may happen to a ſhip or cargo, during a voyage, provided they are not occaſioned by default of the perſon inſured. For this agreement the latter pays a certain ſum in advance, called the *præmium*, which accordingly falls to the inſurer, in caſe the ſhip arrives in a ſafe harbour ; but if the ſhip is loſt, the inſurer renders the ſtipulated ſum to the merchant.

JOURNAL, in navigation, a ſort of diary, or daily regiſter of the ſhip's courſe, winds, and weather ; together with a general account of whatever is material to be remarked in the period of a ſea voyage.

In all ſea-journals, the day, or what is called the 24 hours, terminates at noon, becauſe the errors of the dead-reckoning are at that period generally corrected by a ſolar obſervation. The daily compact uſually contains the ſtate of the weather, the variation, increaſe, or diminution of the wind ; and the ſuitable ſhifting, reducing, or enlarging the quantity of ſail extended ; as alſo the moſt material incidents of the voyage, and the condition of the ſhip and her crew ; together with the diſcovery of other ſhips or fleets, land, ſhoals, breakers, ſoundings, &c.

The form of keeping journals is very different in merchant ſhips ; but one method appears to be invariably purſued in the navy, which nevertheleſs is certainly capable of improvement, becauſe no form can be properly called perfect, that leaves as great a ſpace for one day's work, the matter of which may be contained in very few lines, as for another that abounds with important incidents, ſo as to occupy ten times the ſpace. If therefore there be

any

any ſuch thing as propriety of method on this occaſion, it ſeems to imply, that the ſpace containing ſhould conform to the matter contained, which will neceſſarily be greater or leſs, according to circumſtances.

IRON-GARTERS, *(bas de ſoie*, Fr.) a cant word for bilboes, or fetters.

IRON-WORK, *(ferrure*, Fr.) a general name for all the pieces of iron, of whatſoever figure or ſize, which are uſed in the conſtruction of a ſhip: as bolts, boom-irons, nails, ſpikes, chains and chain-plates, block-ſtrops, cranks, pintles, and googings.

The moſt material of theſe articles are explained in their proper places.

ISLAND OF ICE, a name given by ſailors to a great quantity of ice collected into one huge ſolid maſs, and floating about upon the ſeas near or within the arctic circle.

Many of theſe fluctuating iſlands are met with on the coaſts of Spitzbergen, to the great danger of the ſhipping employed in the Greenland fiſhery.

JUNK, *(bouts de cable*, Fr.) a name given to any remnants or pieces of old cable, which is uſually cut into ſmall portions for the purpoſe of making points, mats, gaſkets, ſennit, &c. See POINTS, &c.

JURY-MAST, a temporary or occaſional maſt, erected in a ſhip to ſupply the place of one which has been carried away by tempeſt, battle, or the labouring of a ſhip in a turbulent ſea.

K.

KAICLING, or KECLING, a name given to any old ropes, which are wound about a cable, with a ſmall interval between the turns, and uſed to preſerve the ſurface of the cable from being fretted, when it rubs againſt the ſhip's bow, or *fore-foot*. See alſo ROUNDING and SERVICE.

KEDGE, (*ancre de touei*, Fr.) a ſmall anchor uſed to keep a ſhip ſteady whilſt ſhe rides in a harbour or river, particularly at the turn of the tide, when ſhe might otherwiſe drive over her principal anchor, and entangle the ſtock or flukes with her ſlack cable, ſo as to looſen it from the ground. This is accordingly prevented by a kedge-rope that reſtrains her from approaching it.

The kedges are alſo particularly uſeful in *tranſporting* a ſhip, *i. e.* removing her from one part of the harbour to another, by means of ropes, which are faſtened to theſe anchors. They are generally furniſhed with an iron ſtock, which is eaſily diſplaced, for the convenience of ſtowing them. See the articles ANCHOR and WARP.

KEEL, the principal piece of timber in a ſhip, which is uſually firſt laid on the blocks in building.

If we compare the carcaſe of a ſhip to the ſkeleton of the human body, the keel may be conſidered as the back-bone, and the timbers as the ribs. It therefore ſupports and unites the whole fabric, ſince the ſtem and ſtern-poſt, which are elevated on its ends, are, in ſome meaſure, a continuation of the keel, and ſerve to connect and encloſe the extremities of the ſides by tranſoms; as the keel forms and unites the bottom by timbers.

The keel is generally compoſed of ſeveral thick pieces, (A, plate I. PIECES of the HULL) placed lengthways, which, after being ſcarfed together, are bolted, and clinched upon the upper ſide. When theſe pieces cannot be procured large enough to afford a ſufficient depth to the keel, there is a ſtrong thick piece of timber bolted to the bottom thereof, called the *falſe keel*, which is alſo very uſeful in preſerving the lower-ſide of the main keel. In our largeſt ſhips of war, the falſe keel is generally compoſed of two pieces, which are called the upper and the lower falſe keels. See MIDSHIP-FRAME.

The loweſt plank in a ſhip's bottom, called the *garboard ſtreak*, has it's inner edge let into a groove, or channel, cut longitudinally on the ſide of the keel: the depth of this channel is therefore regulated by the thickneſs of the garboard-ſtreak.

KEEL is alſo a name given to a low flat-bottomed veſſel, uſed in the river Tyne to bring the coals down from Newcaſtle, and the adjacent parts, in order to load the colliers for tranſportation.

Upon an even KEEL, the poſition of a ſhip when her keel is parallel to the plane of the horizon, ſo that ſhe is equally deep in the water at both ends.

KEEL-HAULING, a puniſhment inflicted for various offences in the Dutch navy. It is performed by plunging the delinquent repeatedly under the ſhip's bottom on one ſide, and hoiſting him up on the other, after having paſſed under the keel. The blocks, or pullies, by which he is ſuſpended, are faſtened to the oppoſite extremities of the main-yard, and a weight of lead or iron is hung upon his legs to ſink him to a competent depth. By this apparatus he is drawn cloſe up to the yard-arm, and thence let fall ſuddenly into the ſea, where, paſſing under the ſhip's bottom, he is hoiſted up on the oppoſite ſide of the veſſel. As this extraordinary ſentence is executed with a ſerenity of temper peculiar to the Dutch, the culprit is allowed ſufficient intervals to recover the ſenſe of pain, of which indeed he is frequently deprived during the operation. In truth, a temporary inſenſibility to his ſufferings ought by no means to be conſtrued into a diſreſpect of his judges, when we conſider that this puniſhment is ſuppoſed to have peculiar propriety in the depth of winter, whilſt the flakes of ice are floating on the ſtream; and that it is continued till the culprit is almoſt ſuffocated for want of air, benumbed with the cold of the water, or ſtunned with the blows his head receives by ſtriking the ſhip's bottom.

To KEEP, a term uſed on ſeveral occaſions in navigation: as,

To KEEP *the land aboard*, is to keep within ſight of land as much as poſſible. See alſo HOLD.

To KEEP *the luff*, to continue cloſe to the wind, *i. e.* ſailing with a courſe inclined to the direction of the wind, as much as poſſible, without deviating to leeward. This is alſo called, *keeping the wind*. See CLOSE-HAULED,

To KEEP *off*, (*alarguer*, *tenir le largue*, Fr.) to ſail off, or keep at a diſtance from the ſhore. See alſo OFFING.

Boat-KEEPER, one of the rowers, who remains as a centinel, in his turn, to take care of any boat and her contents, either when ſhe lies by the ſhore, or along-ſide of the ſhip; or when ſhe is towed aſtern of her.

KELSON, (*contre quille*, Fr.) a piece of timber, which may be properly defined the interior, or counter-part of the keel, as it is laid upon the middle of the floor-timbers, immediately over the keel, and, like it, compoſed of ſeveral pieces, ſcarfed together, repreſented by X, plate I. PIECES of the HULL. In order to ſit with more ſecurity upon the floor-timbers and crotches, it is notched about an inch and a half deep, oppoſite to each of thoſe pieces, and thereby firmly ſcored down upon them to that depth, where it is ſecured by ſpike-nails. The pieces of which it is formed are only half the breadth and thickneſs of thoſe of the keel.

The kelſon ſerves to bind and unite the floor-timbers to the keel. It is confined to the keel by long bolts, which, being driven from without through

ſeveral

ſeveral of the timbers, are fore-locked or clinched upon rings on the upper ſide of the kelſon.

KETCH, (*bombarde*, Fr.) a veſſel equipped with two maſts, viz. the main-maſt and mizen-maſt, and uſually from 100 to 250 tons burthen.

KETCHES are principally uſed as yachts, or as bomb-veſſels, the former of which are employed to convey princes of the blood, ambaſſadors, or other great perſonages from one part to another; and the latter are uſed to bombard citadels, or towns, or other fortreſſes.

The bomb-ketches are therefore furniſhed with all the apparatus neceſſary for a vigorous bombardment. They are built remarkably ſtrong, as being fitted with a greater number of *riders* than any other veſſel of war; ſee fig. 5. plate VII. and indeed this reinforcement is abſolutely neceſſary to ſuſtain the violent ſhock produced by the diſcharge of their mortars, which would otherwiſe, in a very ſhort time, ſhatter them to pieces. See MORTAR and SHELL.

KEVELS, (*taquets*, Fr.) a frame compoſed of two pieces of timber, whoſe lower ends reſt in a ſort of ſtep or foot, nailed to the ſhip's ſide, from whence the upper ends branch outward into arms or horns, ſerving to belay the great ropes by which the bottoms of the main-ſail and foreſail are extended. Theſe are repreſented by fig. 3. plate V.

KEY, (*quai*, Fr.) a long wharf, uſually built of ſtone, by the ſide of a harbour or river, and having ſeveral ſtore-houſes for the convenience of lading and diſcharging merchant-ſhips. It is accordingly furniſhed with poſts and rings, whereby they are ſecured; together with cranes, capſterns, and other engines, to lift the goods into, or out of, the veſſels which lie along-ſide.

KEYS, (*attalons*, Fr.) are alſo certain ſunken rocks, lying near the ſurface of the water, particularly in the Weſt-Indies.

KINK, a ſort of twiſt or turn in any cable or other rope, occaſioned by it's being very ſtiff or cloſe-laid; or by being drawn too haſtily out of the roll or tier, wherein it lay coiled. See the article COILING.

KNEE, (*courbe*, Fr.) a crooked piece of timber, having two branches, or arms, and generally uſed to connect the beams of a ſhip with her ſides or timbers.

The branches of the knees form an angle of greater or ſmaller extent, according to the mutual ſituation of the pieces which they are deſigned to unite. One branch is ſecurely bolted to one of the deck-beams, whilſt the other is in the ſame manner attached to a correſponding timber in the ſhip's ſide, as repreſented by E in the MIDSHIP-FRAME, plate VII.

Beſides the great utility of knees in connecting the beams and timbers into one compact frame, they contribute greatly to the ſtrength and ſolidity of the ſhip, in the different parts of her frame to which they are bolted, and thereby enable her, with greater firmneſs, to reſiſt the effects of a turbulent ſea.

In fixing of theſe pieces, it is occaſionally neceſſary to give an oblique direction to the vertical, or ſide-branch, in order to avoid the range of an

adjacent gun-port, or, becauſe the knee may be ſo ſhaped as to require this diſpoſition; it being ſometimes difficult to procure ſo great a variety of knees as may be neceſſary in the conſtruction of a number of ſhips of war.

In France, the ſcarcity of theſe pieces has obliged their ſhipwrights frequently to form their knees of iron.

Knees are either ſaid to be *lodging* or *hanging*. The former are fixed horizontally in the ſhip's frame, having one arm bolted to the beam, and the other acroſs two or three timbers, as repreſented by F in the Deck, plate III. The latter are fixed vertically, as we have deſcribed above. See alſo Building, Deck, and Midship-Frame.

Knee *of the head*, (*poulaine*, Fr.) a large flat piece of timber, fixed edgways upon the fore-part of a ſhip's ſtem, and ſupporting the ornamental figure or image, placed under the bowſprit. See the article Head.

The knee of the head, which may properly be defined a continuation of the ſtem, as being prolonged from the ſtem forwards, is extremely broad at the upper-part, and accordingly compoſed of ſeveral pieces united into one, YY, plate I. Pieces of the Hull. It is let into the head, and ſecured to the ſhip's *bows* by ſtrong knees fixed horizontally upon both, and called the *cheeks of the head*, Z Z, plate IV. fig. 10. The heel of it is ſcarfed to the upper end of the fore-foot, and it is faſtened to the ſtem above by a knee, called a *ſtandard*, expreſſed by &, in plate I. Pieces of the Hull.

Beſides ſupporting the figure of the head, this piece is otherwiſe uſeful, as ſerving to ſecure the boom, or *bumkin*, by which the fore-tack is extended to windward; and, by it's great breadth, preventing the ſhip from falling to leeward, when *cloſe-hauled*, ſo much as ſhe would otherwiſe do. It alſo affords a greater ſecurity to the bowſprit, by increaſing the angle of the bob-ſtay, ſo as to make it act more perpendicularly on the bowſprit.

The knee of the head is a phraſe peculiar to ſhipwrights; as this piece is always called the *cut-water* by ſeamen, if we except a few, who affecting to be wiſer than their brethren, have adopted this expreſſion probably on the preſumption that the other is a cant phraſe, or vulgariſm. It appears a material part of the province of this work to call the ſeveral articles contained therein by their proper names, and to reject thoſe which are ſpurious, however ſanctified by the authority of official dulneſs, or ſeconded by the adoption of dignified ignorance. Accordingly we cannot help obſerving, that when a term of art has been eſtabliſhed from time immemorial, and, beſides being highly expreſſive, produces the teſtimony of foreign nations * to it's propriety, nothing more certainly betrays a ſuperficial underſtanding, than the attempt to change it, without being able to aſſign the ſhadow of a reaſon for this alteration. For although *knee of the head*, being invariably uſed by the artificers, is of courſe explained in this work as a term of naval architecture, wherein practice has indeed rendered it natural and intelligible; it is nevertheleſs very rarely uſed by ſeamen, eſpecially in common diſcourſe, unleſs when it is intended to impreſs the hearer with an idea of the ſpeaker's ſuperior judgment.

* The cut-water is called *taille-mer* by the French.

KNIGHT-

KNIGHT-HEAD, or BOLLARD-TIMBER. See the article HEAD.

KNIGHT-HEADS, two ſtrong pieces of timber, fixed on the oppoſite ſides of the main-deck, a little behind the fore-maſt, in a merchant-ſhip. They are uſed to ſupport and incloſe the ends of the windlaſs, which accordingly is turned therein as upon an axis. As each of the knight-heads is formed of two pieces, they may be occaſionally ſeparated in order to take off the turns of the cable from the windlaſs, or replace them upon it. They are ſometimes called the *bits*, and in this ſenſe their upper parts only are denominated knight-heads, which being formerly embelliſhed with a figure deſigned to reſemble a human head, gave riſe to the name they have ever ſince retained. See the article WINDLASS.

KNIGHT-HEADS, *(ſep de driſſe*, Fr.) was alſo a name formerly given to the lower jear-blocks, which were then no other than bits, containing ſeveral ſheaves, and nearly reſembling our preſent top-ſail-ſheet bits.

KNITTLE, *(eguillette*, Fr. *from knit)* a ſmall line, which is either plaited or twiſted, and uſed for various purpoſes at ſea; as to faſten the ſervice on the cable, to reef the ſails by the bottom, and to hang the hammocks between decks; this name is alſo given to the loops or buttons of a bonnet.

KNOT, a large knob formed on the extremity of a rope, by untwiſting the ends thereof, and interweaving them regularly amongſt each other. There are ſeveral ſorts of knots, which differ in their form and ſize, according to the uſes for which they are deſigned: the principal of theſe are the diamond-knot, the roſe-knot, the wall-knot, or walnut; ſome of which are ſingle, and others double.

The knots are generally uſed to faſten one rope to another, by means of a ſmall cord attached to the neck of the knot, called the *laniard*, which is firmly tied about both ropes. They are alſo deſigned to prevent the end of a rope from ſliding through an *eye*, which the knot is intended to confine in a particular ſituation. See BECKETS.

L.

TO LABOUR, *(travailler*, Fr.) as a ſea-term, implies to roll or pitch heavily in a turbulent ſea; an effect, by which the maſts and hull of the ſhip are greatly endangered, becauſe by the rolling motion the maſts ſtrain upon their ſhrouds with an effort, which increaſes as the ſine of their obliquity: and the continual agitation of the veſſel gradually looſens her joints, and often makes her extremely leaky.

LADDER, *(echelle*, Fr.) a well-known convenience, of which there are a great number in a ſhip, formed of two pieces of plank joined together by croſs-pieces, which ſerve as ſteps, whereby to mount or deſcend from one deck to another.

The ladders derive their names from the ſeveral hatchways, or other parts of a ſhip, wherein they are ſituated. Beſides theſe, there are, of a particular conſtruction, the accommodation-ladder and the quarter-ladders.

Accommodation-LADDER, is a ſort of light ſtair-caſe, occaſionally fixed on the gangway of the admiral, or commander in chief, of a fleet. It is furniſhed with rails and entering-ropes, covered with red bays, and the lower-end of it is retained at a competent diſtance from the ſhip's ſide by iron bars, or braces, to render the paſſage more convenient to thoſe who enter or depart from the ſhip. See the article GANGWAY.

Quarter-LADDERS, two ladders of rope, depending from the right and left ſide of a ſhip's ſtern, whereby to deſcend into the boats which are moored aſtern, in order to bring them up along-ſide of the ſhip; or to uſe them for any other occaſion.

LADEN, *(chargée*, Fr.) the ſtate of a ſhip when ſhe is charged with a weight or quantity of any ſort of merchandizes, or other materials, equal to her tonage or burthen. If the cargo with which ſhe is laden is extremely heavy, her burthen is determined by the weight of the goods; and if it is light, ſhe carries as much as ſhe can *ſtow*, to be fit for the purpoſes of navigation. As a ton in meaſure is generally eſtimated at 2000 lb. in weight, a veſſel of 200 tons ought accordingly to carry a weight equal to 400,000 lb. when the matter of which the cargo is compoſed is ſpecifically heavier than the water in which ſhe floats; or, in other words, when the cargo is ſo heavy that ſhe cannot float high enough, with ſo great a quantity of it, as her hold will contain.

LADEN *in bulk*, the ſtate of being freighted with a cargo which is neither in caſks, boxes, bales, or caſes, but lies looſe in the hold; being defended from the moiſture, or wet of the hold, by a number of mats and a quantity of *dunage*. Such are uſually the cargoes of corn, ſalt, or ſuch materials.

LAID-UP, the ſituation of a ſhip when ſhe is either moored in a harbour during the winter-ſeaſon, or laid by, for want of employment: or when by age and crazineſs ſhe is rendered incapable of further ſervice.

LANCH, a peculiar ſort of long-boat, uſed by the French, Spaniſh, and Italian ſhipping; and in general by thoſe of other European nations, when employed in voyaging in the Mediterranean ſea.

A lanch is proportionably longer, lower, and more flat-bottomed than the long-boat; it is by conſequence leſs fit for ſailing, but better calculated for rowing and approaching a flat ſhore. It's principal ſuperiority to the long-boat, however, conſiſts in being, by it's conſtruction, much fitter to underrun the cable, which is a very neceſſary employment in the harbours of the Levant ſea, where the cables of different ſhips are faſtened acroſs each other, and frequently render this exerciſe extremely neceſſary.

LANCH is alſo the movement by which a ſhip or boat deſcends from the ſhore, either when ſhe is at firſt built, or at any time afterwards.

To facilitate the operation of lanching, and prevent any interruption therein, the ſhip is ſupported by two ſtrong platforms, laid with a gradual inclination to the water, on the oppoſite ſides of her keel, to which they are parallel. Upon the ſurface of this declivity are placed two correſponding ranges of planks, which compoſe the baſe of a frame called the *cradle*, whoſe upper-part envelopes the ſhip's bottom, whereto it is ſecurely attached. Thus the lower ſurface of the cradle, conforming exactly to that of the frame below, lies flat upon it, lengthways, under the oppoſite ſides of the ſhip's bottom; and as the former is intended to ſlide downwards upon the latter, carrying the ſhip along with it, the planes or faces of both are well daubed with ſoap and tallow.

The neceſſary preparations for the lanch being made, all the blocks and wedges, by which the ſhip was formerly ſupported, are driven out from under her keel, till her whole weight gradually ſubſides upon the platforms above deſcribed, which are accordingly called the *ways*. The *ſhores* and ſtanchions, by which ſhe is retained upon the ſtocks till the period approaches for lanching, are at length cut away, and the ſcrews applied to move her, if neceſſary. The motion uſually begins on the inſtant when the ſhores are cut, and the ſhip ſlides downward along the ways, which are generally prolonged under the ſurface of the water, to a ſufficient depth, to float her as ſoon as ſhe arrives at the furtheſt end thereof.

When a ſhip is to be lanched, the enſign, jack, and pendent, are always hoiſted, the laſt being diſplayed from a ſtaff erected in the middle of the ſhip. Plate V. fig. 4. repreſents a ſhip of war ready to be lanched from the ſtocks.

The largeſt ſhip that ever was lanched in England, is the Britannia, of 100 guns, built at Portſmouth. Ships of the firſt rate are commonly conſtructed in dry docks, and afterwards floated out, by throwing open the flood-gates, and ſuffering the tide to enter, as ſoon as they are finiſhed.

LANCH, the order to let go the *top-rope*, after any top-maſt is *ſided*.

LAND-FALL, (*atterrage*, Fr.) the firſt land diſcovered after a ſea-voyage: hence it is common for ſhips, who accoſt each other at ſea, to

wiſh a good land-fall at parting, by which they imply a diſcovery of land, at or near the place whither their courſe is directed, and which they expect to *make* by their journals.

LAND-LOCKED, (*bouclé*, Fr.) the ſituation of a ſhip which is environed by the land on all ſides in a road, bay, or haven; ſo as to exclude the proſpect of the ſea, unleſs over ſome intervening land. See the French word *terre*, and the phraſes following it.

LANGREL, or LANGRAGE, (*mitrailles*, Fr.) a particular kind of ſhot, formed of bolts, nails, bars, or other pieces of iron tied together, and forming a ſort of cylinder, which correſponds with the bore of the cannon, from which it is intended to be diſcharged. This contrivance is particularly deſigned to wound or carry away the maſts, or tear the ſails and rigging of the adverſary, ſo as to diſable him from flight or purſuit. It is never uſed in royal ſhips, but very often by privateers and merchantmen.

LANIARD, (*lanier*, Fr.) a ſhort piece of cord or line, faſtened to ſeveral machines in a ſhip, and ſerving to ſecure them in a particular place, or to manage them more conveniently. Such are the laniards of the gun-ports, the laniard of the buoy, the laniard of the cat-hook, &c.

The principal laniards uſed in a ſhip, however, are thoſe employed to extend the ſhrouds and ſtays of the maſts, by their communication with the dead-eyes, ſo as to form a ſort of mechanical power, reſembling that of a tackle. See DEAD-EYES.

Theſe laniards, (*rides*, Fr.) are fixed in the dead-eyes as follows: One end of the laniard is thruſt through one of the holes in the upper dead-eye, and then knotted, to prevent it from drawing out; the other end is then paſſed through one of the holes in the lower dead-eye, whence, returning upward, it is inſerted through the ſecond hole in the upper dead-eye, and next through the ſecond in the lower dead-eye, and finally through the third holes in both dead-eyes. The end of the laniard, being then directed upwards from the loweſt dead-eye, is ſtretched as ſtiff as poſſible by the application of tackles; and that the ſeveral parts of it may ſlide with more facility through the holes in the dead-eyes, it is well ſmeared with hog's lard or tallow, ſo that the ſtrain is immediately communicated to all the turns at once.

LANTHORN, a well-known machine, of which there are many uſed in a ſhip, particularly for the purpoſe of directing the courſe of other ſhips in a fleet or convoy: ſuch are the poop and top-lanthorns, &c.

LAP-SIDED, (*bordier*, Fr.) the ſtate of a ſhip, which is built in ſuch a manner as to have one ſide heavier than the other; and, by conſequence, to retain a conſtant *heel*, or inclination towards the heavieſt ſide; unleſs when ſhe is brought upright, by placing a greater quantity of the cargo, or ballaſt, on the other ſide. See BALLAST.

LARBOARD, (*baſbord*, Fr.) a name given by ſeamen to the left ſide of a ſhip, wherein the right and left are apparently determined by the analogy of a ſhip's poſition, on the water, to that of a fiſh.

LARBOARD-WATCH, (*baſbordes*, or *baſbordais*, Fr.) a diviſion of a ſhip's company on duty, while the other is relieved from it.

LARGE, a phraſe applied to the wind, when it croſſes the line of a ſhip's courſe in a favourable direction, particularly on the *beam* or *quarter*. To

underſtand this more clearly, let us ſuppoſe a ſhip ſteering weſt; then the wind, in any point of the compaſs to the eaſtward of the ſouth or north, may be called *large*, unleſs indeed when it is directly eaſt, and then it is ſaid to be right aft.

Sailing LARGE, (*aller vent largue*, Fr.) is therefore advancing with a large wind, ſo as that the *ſheets* are ſlackened and *flowing*, and the *bowlines* entirely diſuſed. This phraſe is generally oppoſed to ſailing *cloſe-hauled*, or with a *ſcant* wind, in which ſituation the ſheets and bowlines are extended as much as poſſible.

LASHING, (*ligne d'amarrage*, Fr.) a piece of rope employed to faſten or ſecure any moveable body in a ſhip, or about her maſts, ſails, and rigging: alſo the act of faſtening or ſecuring any thing by means of the rope uſed for this purpoſe.

LATEEN-SAIL, a long triangular ſail extended by a lateen-yard, and frequently uſed by xebecs, polacres, ſettees, and other veſſels navigated in the Mediterranean ſea.

LAYING THE LAND, in navigation, the ſtate of motion which increaſes the diſtance from the coaſt, ſo as to make it appear lower and ſmaller; a circumſtance which evidently ariſes from the intervening convexity of the ſurface of the ſea. It is uſed in contradiſtinction to *raiſing* the land, which is produced by the oppoſite motion of approach towards it.

LEAK, a chink or breach in the decks, ſides, or bottom of a ſhip, through which the water paſſes into her hull. When a leak firſt commences, the veſſel is ſaid to have ſprung a leak.

LEAKY, the ſtate of a ſhip when abounding with leaks.

LEDGES, (*barotins*, Fr.) certain ſmall pieces of timber placed *athwart-ſhips*, under the decks of a ſhip, in the intervals between the beams, as exhibited in the repreſentation of the deck, plate III.

LEDGE is alſo a long ridge of rocks, near the ſurface of the ſea.

LEE, an epithet uſed by ſeamen to diſtinguiſh that part of the hemiſphere to which the wind is directed, from the other part whence it ariſes; which latter is accordingly called *to windward*. This expreſſion is chiefly uſed when the wind croſſes the line of a ſhip's courſe, ſo that all on one ſide of her is called *to-windward*, and all on the oppoſite ſide, *to-leeward*: and hence,

Under the LEE, implies further to the leeward, or further from that part of the horizon from whence the wind blows; as,

Under the LEE *of the ſhore*; *i. e.* at a ſhort diſtance from the ſhore which lies to windward. This phraſe is commonly underſtood to expreſs the ſituation of a veſſel, anchored, or ſailing under the weather-ſhore, where there is always ſmoother water, and leſs danger of heavy ſeas, than at a great diſtance from it*.

LEE-LARCHES, the ſudden and violent rolls which a ſhip often takes to the leeward in a high ſea, particularly when a large wave ſtrikes her on the weather-ſide.

* Milton alludes to this ſituation, in his ſecond book of *Paradiſe Loſt*: where,

"The pilot of ſome ſmall night-founder'd ſkiff,
"With fixed anchor ———
"Moors by his ſide, under the lee."———

Lee-side, all that part of a ſhip or boat which lies between the maſt, and the ſide furtheſt from the direction of the wind; or otherwiſe, the half of a ſhip, which is preſſed down towards the water by the effort of the ſails, as ſeparated from the other half, by a line drawn through the middle of her length. That part of the ſhip, which lies to windward of this line, is accordingly called the *weather-ſide*.

Thus admit a ſhip to be ſailing ſouthward, with the wind at eaſt, then is her ſtarboard, or right-ſide, the *lee-ſide*; and the larboard, or left, the *weather-ſide*.

Leeward-ship, a veſſel that falls much to leeward of her courſe, when ſailing *cloſe-hauled*, and conſequently loſes much ground.

To Leeward, towards that part of the horizon which lies under the lee, or whither the wind bloweth. Thus, "We ſaw a fleet under the lee," and, "We ſaw a fleet to leeward," are ſynonymous expreſſions.

Lee-way, is the lateral movement of a ſhip to-leeward of her courſe, or the angle which the line of her way makes with the keel when ſhe is *cloſe-hauled*. See that article.

This movement is produced by the mutual effort of the wind and ſea upon her ſide, forcing her to leeward of the line upon which ſhe appears to ſail; and in this ſituation her courſe is neceſſarily a compound of the two motions by which ſhe is impelled, of which the one preſſes forward, according to the line of her keel, from H to K, fig. 5. plate V. whilſt the other, acting in the line B A, puſhes her to leeward of the courſe from B towards A, with a motion which is uſually in proportion to the force of the wind, and the rate of her velocity, as appears by the following theory.

When a ſhip is cloſe-hauled, and the head-ſails are in perfect equilibrio with thoſe abaft, the reſiſtance of the water from A to B. fig. 5. plate V. is equal to the impulſe of the ſails, whether it is impreſſed upon the center of gravity H of the ſhip, or any other point of her length before or abaft it. In this ſituation, the ſhip will as readily bear away as come nearer to the wind, with regard to the reſiſtance of the water upon her bottom on one ſide, and the impulſion of the wind upon the ſails on the other. But it muſt be obſerved, that the united effort of the ſails acts upon the ſhip according to a direction B A, perpendicular to their ſurfaces, and commencing it's action in ſome point H, being the mean *d* between the different effects C G, of the ſails *afore* and abaft, which ſhould exactly correſpond with the reſiſtance of the water from A towards B; ſo that the veſſel is puſhed to leeward of the courſe I K, which ſhe ſteers in the direction B A of the effort of the ſails. But the reſiſtance of the water, acting upon the lee-ſide of her bottom, counterbalances this effort, and becomes ſtronger, in proportion to the greater facility with which ſhe divides the fluid with her ſtem; ſo that ſhe will really advance in the courſe N R, which lies nearer the line of her keel than B A. Thus the angle K H R of the lee-way is proportional to the greater or leſs reſiſtance the ſhip meets with from the fluid upon her lee-ſide, reſpectively with her greater or leſs facility of dividing it with her fore-part; ſo that the lee-way is very inconſiderable, except when the

the ſhip is cloſe-hauled, and is accordingly diſregarded whenever the wind is large.

This demonſtration might be puſhed further by a fact founded on daily experience, which proves that not only the lee-way depends on the form of the veſſel, but alſo the degree of velocity with which ſhe advances; and perhaps never, intirely, upon the greater or leſs obliquity of the ſails with the keel, as ſome authors have pretended. For when a ſwift-ſailing ſhip is *cloſe-hauled*, with all her ſails out, in a very light wind, and ſcarcely having *ſteerage-way*, the lee-way is conſiderable even in ſmooth water. This is occaſioned by the tardy motion of the veſſel, which being feebly puſhed forward cannot impreſs the water with a forcible effect, and by conſequence feels no reſiſtance from it, but is accordingly carried with facility by her ſails, in the direction of their effort B A: and if we conſider the ſituation of the ſhip's ſide, which preſents a great ſurface of ſail above the water, it appears that the lee-way will become yet more perpendicular to the keel. But when the wind makes a forcible impreſſion, the velocity of moving forward is conſiderably augmented; the ſhip ſtrikes the fluid with a force, expreſſed by the ſquare of two or three leagues of ſwiftneſs, from B towards A. in the ſpace of an hour, whilſt the water repels her effort in a contrary direction. The reſiſtance of the water is then in the ratio of this ſquare to the ſquare of her firſt velocity, or head-way; and in this ſtate will not readily yield to it's effort. The lee-way immediately decreaſes, and will be ſtill further diminiſhed, if the ſhip's courſe is accelerated. If then at the moment when the ſhip advances with great rapidity, ſhe *bears away* 12 or 15 degrees, or even two points, without altering the general arrangement of her ſails, their obliquity remains the ſame; the ſhip therefore ought to have the ſame lee-way, according to the opinion of thoſe who have written on the theory of ſailing. The velocity is augmented, becauſe the ſails then receive the wind by a greater ſine of incidence, and thereby acquire a more powerful effort, whilſt the ſhip's *head* is always ſtruck by the water in the ſame parts, and by the ſame ſine of incidence; ſo that the lee-way is alſo diminiſhed, becauſe the water reſiſts more, in conſequence of the accelerated ſwiftneſs; and becauſe the reſiſtance is more exerted on the ſhip's ſide than on her head, which is leſs oppoſed to it's impulſion. Hence we may conclude, that the lee-way of a ſhip does not entirely depend on the diſpoſition of her ſails; that it is different in different veſſels, becauſe they are neither formed alike, nor are their ſails equally *trimmed* in the ſame oblique courſes: and finally, becauſe they have always a different velocity, at the ſame time, and under the ſame ſail. Thus it is evident, that the lee-way is always compoſed of the ſhip's comparative velocity; of her form, which gives more or leſs proportional reſiſtance upon the ſide than on the fore-part; and of the diſpoſition of her ſails, as forming a greater or ſmaller obliquity with the keel. See alſo CLOSE-HAULED, DRIFT, and SAILING.

LEECHES, (*bords*, Fr.) the borders or edges of a ſail, which are either ſloping or perpendicular. See GORING.

The

The leeches of all ſails, whoſe tops and bottoms are parallel to the deck, or at right angles with the maſt, are denominated from the ſhip's ſide, and the ſail to which they belong; as the *ſtarboard* leech of the main-ſail, the *lee* leech of the fore-top-ſail, &c. but the ſails which are fixed obliquely upon the maſts, have their leeches named from their ſituation with reſpect to the ſhip's length; as the fore-leech of the mizen, the after-leech of the jib, or fore-ſtay-ſail, &c.

LEECH-LINES, (*cargues-bouline*, Fr.) certain ropes faſtened to the middle of the leeches of the main-ſail and fore-ſail, and communicating with blocks under the oppoſite ſides of the top, whence they paſs downwards to the deck, ſerving to truſs up thoſe ſails to the yard, as occaſion requires. See BRAILS.

LEECH-ROPE, (*ralingue*, Fr.) a name given to that part of the bolt-rope, to which the border, or ſkirt of a ſail is ſewed. In all ſails, whoſe oppoſite leeches are of the ſame length, it is terminated above by the earing, and below by the clue. See BOLT-ROPE, CLUE, and EARING.

LENGTHENING, the operation of cutting a ſhip down acroſs the middle, and adding a certain portion to her length. It is performed by ſawing her planks aſunder, in different places of her length, on each ſide of the midſhip frame, to prevent her from being weakened too much in one place. The two ends are then drawn apart, to a limited diſtance, which muſt be equal to the propoſed addition of length. An intermediate piece of timber is next added to the keel, upon which a ſufficient number of timbers are erected, to fill up the vacancy produced by the ſeparation. The two parts of the kelſon are afterwards united, by an additional piece which is ſcored down upon the floor-timbers; and as many beams as may be neceſſary are fixed acroſs the ſhip in the new interval. Finally, the planks of the ſide are prolonged, ſo as to unite with each other, and thoſe of the ceiling refitted in the ſame manner; by which the whole proceſs is completed.

To LET *in*, (*enclaver*, Fr.) amongſt ſhiprights, is to fix a diminiſhed part of one plank, or piece of timber into a vacancy, formed in another for this purpoſe. See RABBIT.

LETTER OF MART, a commiſſion granted by the lords of the admiralty, or by the vice-admiral of any diſtant province, to the commander of a merchant-ſhip, or privateer, to cruize againſt, and make prizes of, the enemy's ſhips and veſſels, either at ſea, or in their harbours.

To LIE *along*, or LIE *over*. See the article ALONG.

To LIE *to*. See LYING-TO, &c.

LIEUTENANT *of a ſhip of war*, the officer next in rank and power to the captain, in whoſe abſence he is accordingly charged with the command of the ſhip; as alſo the execution of whatever orders he may have received from the commander relating to the king's ſervice.

The lieutenant, who commands the watch at ſea, keeps a liſt of all the officers and men thereto belonging, in order to muſter them, when he judges it expedient, and report to the captain the names of thoſe who are abſent from their duty. During the night-watch, he occaſionally viſits the lower decks, or ſends thither a careful officer, to ſee that the proper centinels are at their

their duty, and that there is no diſorder amongſt the men; no tobacco ſmoked between decks, nor any fire or candles burning there, except the lights which are in lanthorns, under the care of a proper watch, for particular purpoſes. He is expected to be always upon deck in his watch, as well to give the neceſſary orders, with regard to *trimming* the ſails and ſuperintending the navigation, as to prevent any noiſe or confuſion; but he is never to change the ſhip's courſe without the captain's directions, unleſs to avoid an immediate danger.

The lieutenant, in time of battle, is particularly to ſee that all the men are preſent at their quarters, where they have been previouſly ſtationed according to the regulations made by the captain. He orders and exhorts them every where to perform their duty, and acquaints the captain at all other times of the miſbehaviour of any perſons in the ſhip, and of whatever elſe concerns the ſervice or diſcipline.

The youngeſt lieutenant of the ſhip, who is alſo ſtiled lieutenant at arms, beſides his common duty, is particularly ordered, by his inſtructions, to train the ſeamen to the uſe of ſmall arms, and frequently to exerciſe and diſcipline them therein. Accordingly his office, in time of battle, is chiefly to direct and attend them, and at all other times to have a due regard to the preſervation of the ſmall arms, that they be not loſt or embezzled, and that they are kept clean and in good condition for ſervice.

LIFTS, (*balanciers*, Fr.) certain ropes, deſcending from the cap and maſt-head, to the oppoſite extremities of the yard immediately under; where, paſſing through a block or pulley, they become double. They are uſed to keep the yard in equilibrio; or to pull one of its extremities higher than the other as occaſion requires; but particularly to ſupport the weight of it, when a number of ſeamen are employed thereon, to furl or *reef* the ſail.

The lifts of the top-ſail-yards, called the top-ſail-lifts, are alſo uſed as *ſheets* to extend the bottom of the top-gallant-ſail above.

The yards are ſaid to be ſquared by the lifts, when they hang at right angles with the maſt; that is to ſay, parallel to the horizon, when the veſſel is upright upon the water.

Topping-LIFT. See TOPPING-LIFT.

LIGHT, (*lege*, Fr.) in the ſea-language is uſed in contradiſtinction to laden. A ſhip is accordingly called light, either when ſhe has no cargo, or when ſhe is not ſufficiently ballaſted.

LIGHTER, (*allege*, Fr.) a large, open, flat-bottomed veſſel, generally managed with oars, and employed to carry goods to or from a ſhip when ſhe is to be laden or delivered. See the article VESSEL.

There are alſo ſome lighters furniſhed with a deck throughout their whole length, in order to contain thoſe merchandizes, which would be damaged by rainy weather: theſe are uſually called cloſe-lighters.

LIGHT-HOUSE, (*phare*, *tour à feu*, Fr.) a ſort of tower erected upon a cape or promontory on the ſea-coaſt, or upon ſome rock in the ſea, and having a great fire, or light formed by candles, upon its top, in the night time, which is conſtantly attended by ſome careful perſon, ſo as to be ſeen

at a great diſtance from the land. It is uſed to direct the ſhipping on the coaſt, as they might otherwiſe run aſhore, or ſteer an improper courſe, when the darkneſs of the night, and the uncertainty of currents, &c. might render their ſituation, with regard to the ſhore, extremely doubtful.

LIGHT-ROOM, *(fanal de ſoute*, Fr.) a ſmall apartment, incloſed with glaſs windows, near the magazine of a ſhip of war. It is uſed to contain the lights by which the gunner, and his aſſiſtants, are enabled to fill the cartridges with powder, to be ready for action.

LIMBERS, or LIMBER-HOLES, *(parcloſſes*, Fr.) certain ſquare holes cut through the lower parts of a ſhip's floor-timbers, very near the keel. Being diſpoſed in a line, parallel to the keel, they form a channel, which communicates with the pumps throughout the whole length of the floor, ſo that the water which enters by a leak, and would otherwiſe be intercepted by the timbers, is eaſily conveyed to the well-room, where the pumps are fixed. Every floor-timber has two limber-holes cut through it, viz. one on each ſide of the *kelſon*.

Limber-Boards, ſhort pieces of plank, which form a part of the ceiling, or lining of a ſhip's floor, cloſe to the kelſon, and immediately above the limbers. They are occaſionally removed, when it becomes neceſſary, to examine, or clear the limber-holes of any filth, ſand, chips, or gravel, by which they may be clogged, ſo as to interrupt the paſſage of the water, in the ſhip's floor, to the pump-well.

Limber-Rope, a long rope, frequently retained in the limber-holes of a ſhip, and communicating from one to another, in order to clear them by pulling the rope backwards and forwards, ſo as to looſen the ſand or dirt by which they may occaſionally be choaked.

LINE, *(ligne*, Fr.) a general name given to the arrangement or order in which a fleet of ſhips of war are diſpoſed to engage an enemy.

This diſpoſition, which is the beſt calculated for the operations of naval war, is formed by drawing up the ſhips in a long file, or right line, prolonged from the keel of the hindmoſt to that of the foremoſt, and paſſing longitudinally through the keels of all the others, from the van to the rear; ſo that they are, according to the ſea-phraſe, in the *wake* of each other.

In the line, or order of battle, all the ſhips of which it is compoſed are *cloſe hauled*, upon the ſtarboard or larboard-tack, about 50 fathoms diſtant from each other. See plate V. fig. 6. where *a b* repreſents the elevation, and A B the plan of this order, upon the ſtarboard-tack; the direction of the wind in both being expreſſed by the arrow in the latter.

A fleet is more particularly drawn up in the line when in preſence of an enemy. It ought to be formed in ſuch a manner as that the ſhips ſhould mutually ſuſtain and reinforce each other, and yet preſerve a ſufficient ſpace in their ſtations, to *work* or direct their movements with facility during the action. Thus they will be enabled effectually to cannonade the enemy, without incommoding the ſhips of their own ſquadron.

The line cloſe-hauled is peculiarly choſen as the order of battle, becauſe if the fleet, which is to windward, were arranged in any other line, the enemy

might ſoon gain the *weather-gage* of it; and even if he thinks it expedient to decline that advantage, it will yet be in his power to determine the diſtance between the adverſe fleets, in an engagement, and to compel the other to action. The fleet to leeward, being in a line cloſe-hauled, parallel to the enemy, can more readily avail itſelf of a change of the wind, or of the neglect of it's adverſary, by which it may, by a dextrous management, get to windward of him: or, ſhould it fail in this attempt, it will nevertheleſs be enabled, by the favourable ſtate of the wind, to avoid coming to action, if the enemy is greatly ſuperior; or to prevent him from eſcaping, if he ſhould attempt it.

Beſides theſe advantages, this order of battle is ſingularly convenient and proper in other reſpects. The ſails of each ſhip are diſpoſed in ſuch a manner as to counter-act each other, ſo that the ſhips in general neither advance nor retreat during the action. By this circumſtance they are enabled to retain their ſtations with greater ſtability, and to proſecute the battle with vigour and reſolution, yet without perplexity and diſorder. The uniformity of the line will be preſerved, ſo that the admiral's orders may be readily communicated by ſignals from the van to the rear. The diſtreſs of any particular ſhip, that is diſabled and rendered incapable to continue the action, will be preſently diſcovered, and her place accordingly ſupplied by one of the ſhips in reſerve. The circumſtances and ſituation of the enemy's line will be ever open to the view of the commander in chief, ſo that he may be enabled to convert any diſaſter that may happen therein to his own advantage.

It may be alledged indeed, that the ſame reaſons hold good with regard to the enemy, to whom this arrangement will be equally beneficial. It may alſo be obſerved, that particular occaſions have rendered it neceſſary to break the order of the line; and that ſometimes this expedient has been practiſed with equal judgment and ſucceſs. To the firſt of theſe allegations it may be anſwered, that in war as well as politics, there are certain general rules abſolutely neceſſary to be obſerved by the hoſtile powers: rules which are founded on mutual convenience, and authoriſed by the invariable example of all ages! Whatever tends to facilitate the deſigns of the adverſe parties on each other, or whatever operates to ſhorten the period of war, and render it leſs deſtructive and fatal, are objects which ought never to be diſregarded. Diſorder has not only a tendency to protract the war, but to make it more bloody and ruinous, and to aggravate all the calamities with which it is inſeparably attended. Perhaps this obſervation is particularly applicable to our preſent purpoſe, unleſs the conſequences of diſorder in a ſea-fight, as related below, ſhould rather be conſidered as the creation of fancy, than a recital of facts, naturally reſulting from known cauſes. Although peculiar circumſtances have ſometimes, by their ſucceſs, juſtified the meaſure of engaging an enemy's fleet, without forming the line; or after the line has been ſeparated; there is nevertheleſs very few operations in war that require greater delicacy and vigilance, if the hoſtile fleets are very near to each other. Perhaps no military enterprize can be attended with greater hazard, or with fewer hopes of ſucceſs. The inceſſant fire of ſo large an aſſembly of ſhips in a very ſhort time covers the ſcene of action with a cloud of

ſmoke, which is conſtantly accumulating. The winds that enabled the two fleets to approach each other are ſoon become extremely feeble, or perhaps perfectly lulled, by the exploſions of a vigorous cannonade: they are of courſe incapable any longer to diſſipate the ſmoke, which then darkens the air, and is almoſt impenetrable to the eye. If in this ſituation the hoſtile ſhips are promiſcuouſly ſcattered amongſt each other, it is eaſy to foretel the miſchief, perplexity, and diſtraction, to which the whole will be inevitably expoſed. Not only is the moſt comprehenſive ſkill of the commander in chief rendered uſeleſs; the ſmaller ſhips, abandoned to their ill fortune, may be torn to pieces by ſuperior force, without relief or ſuccour: and, what is infinitely worſe than all, the ſhips of the ſame fleet may cannonade each other, with all the reſolution and ſpirit which they exert againſt their enemies! If the deſign of war is conqueſt, and not maſſacre, it is thus totally perverted! The battle, inſtead of being brought to a ſpeedy iſſue, and decided by a victory and defeat, is unhappily protracted into a ſcene of ſlaughter and ruin, equally fatal and undeciſive to both parties.

If then diſorder and confuſion are fraught with ſuch dangerous conſequences in a naval armament, it is no leſs certain that the principal ſinews of it's ſtrength are diſcipline, regularity, vigilance, and activity. It has been already remarked, that the ſhips of the line ſhould be ſufficiently cloſe, to ſuſtain each other; for if they are further apart than thoſe of the enemy's line, many ſingle ſhips will ſuffer the fire of two at once. Hence the fleet is rendered inferior to that of the enemy, at the onſet of battle; a circumſtance which evinces the ſuperiority of larger ſhips, accompanied with weightier metal! the enemy is defeated by the efforts of a more numerous and more powerful artillery.

Beſides theſe advantages, the larger ſhips are in other reſpects highly preferable in a line of battle. They overlook thoſe of an inferior rate, which are accordingly laid open to the fire of their muſquetry. In a high ſea they can more ſafely employ the artillery of their lower deck than a ſmaller ſhip; and if both are obliged to ſhut their lower deck ports, the advantage of the three-decked ſhips, with regard to their cannon, will yet be conſiderable: they have three tier againſt two, and two againſt one. The ſame ſuperiority ſubſiſts, in caſe they are diſmaſted, when the upper-deck is encumbered with the ruins.

The large ſhips, being higher *between-decks*, are leſs incommoded with the ſmoke; and their cannon is managed with greater facility.

The large ſhips, having greater ſolidity of frame, are better calculated to reſiſt the effects of battle and tempeſt. In general alſo, they ſail better than the ſmall ones, except in fine weather; for in a freſh wind, when the ſea becomes agitated, they have always the ſuperiority.

The fire-ſhips do not ſucceed ſo well againſt large ſhips as the ſmaller ones: the artillery will ſink them, or oblige them ſooner to relinquiſh their deſign; and they are eaſily *towed* away by the great long-boats.

The line of a fleet, which has abundance of capital ſhips, need not be ſo much incloſed as that of an enemy who has fewer. The former may be alſo leſs numerous, without being weaker.

An open line will, on many occaſions, work more eaſily than one which is more incloſed; and if it is leſs numerous, the movements thereof are more expeditious; the ſignals better attended to; the general order more exactly preſerved; and the ſhips leſs liable to be ſeparated. Hence it will be leſs embarraſſed by a change of wind, and the order will be ſooner re-eſtabliſhed.

A leſs numerous line will more readily approach or eſcape from an enemy, or a hoſtile ſhore; and, finally, when cruizing in a ſmaller ſpace, it will not be ſo much contracted.

From the preceding reflections it reſults, that the line, which contains more capital ſhips, will be ſtronger than one more numerous, if compoſed of ſmaller ſhips. This reflection however does not exclude a certain number of the third and fourth *rates*, which are neceſſary in all naval armaments *.

As the hoſtile fleets are drawn up in two oppoſite lines, with their ſides to the wind, it is evident that one muſt be to the leeward of the other, as appears in fig. 8. plate V. Both ſituations however have their defects as well as advantages.

The advantages of a weather-line are generally, that it may approach the enemy ſo as to determine the time and diſtance of action. If it is more numerous than the lee-line, it may eaſily appoint a detachment to fall upon the van and rear of the latter, and incloſe it between two fires. It is little incommoded by the fire or ſmoke of the cannon, and may diſpatch the fire-ſhips, under cover of the ſmoke, upon the diſabled ſhips of the lee-line; or whereſoever they may occaſion perplexity and diſorder, by obliging the enemy to break the line and *bear away*.

The weather-line has nevertheleſs it's defects, which ſometimes counterbalance the advantages above recited. If the ſea is rough, and the wind boiſterous, it cannot readily fight with the lower-deck battery. It cannot decline the action, without the dangerous expedient of forcing through the enemy's line: and if it *keeps the wind*, the lee-line may incloſe, and totally deſtroy it, eſpecially if it is inferior in number to the latter; or if the ſhips thereof are in bad condition; for it then can find no other reſource but in the dexterity of it's manœuvres, unleſs it is favoured by the wind, or any overſight of the enemy. The diſabled ſhips of the weather-line muſt tack, to avoid falling into the enemy's fleet; and if they are much ſhattered, they may be altogether ſeparated from their own fleet, particularly if they are in the rear of the line.

The line to leeward has alſo it's advantages, which have occaſionally been preferred to thoſe of the weather-line. The ſhips of the former may uſe the guns of their lower decks, without the hazard of taking in much water at the ports in ſtormy weather; whereas the line to windward dare not open them, without the greateſt danger. If the lee-line, although more numerous, cannot ſo eaſily *double* upon the van and rear of the enemy, and incloſe them between two fires, it may nevertheleſs have opportunities of tacking, and cutting off a part of the enemy's rear, by obliging them to bear away, or

* De Morogues, Tactique Navale.

ſeparate

ſeparate from the reſt. The diſabled ſhips to leeward are much more readily removed from the line than thoſe to windward, without being obliged to tack and continue expoſed to the enemy's fire: they bear away, and remain at a competent diſtance from the fleet in a ſtate of ſafety. Finally, the lee-line can with more facility avoid the action than it's adverſary; a circumſtance which is extremely favourable to an inferior ſquadron.

The defects of the lee-line, on the contrary, are, that it cannot decide the time and diſtance of the battle, which may commence before it is ſufficiently formed; and it will perhaps be attacked by an enemy, who bears away upon it in regular order. The fire and ſmoke of the weather-line are a great inconvenience to it; and it cannot eaſily break the enemy's line with it's fire-ſhips, which are very ſlowly and with great difficulty conveyed to windward.

It muſt be remarked, that the admiral's ſhip attentively preſerves her ſtation in the center of the line; for if the commander in chief ſhould give way to the caprice or inattention of any of thoſe under his direction, it would introduce an endleſs diſorder into the ſquadron.

To illuſtrate this article, and enable the reader to form a clearer idea of the line, we have, in plate V. repreſented ſeveral diſtinct views, according to the different ſituations which it occaſionally aſſumes.

Fig. 7. exhibits a perſpective view of the line of battle on the ſtarboard-tack, A B being the plan thereof.

Fig. 8. *a*, repreſents the profile of the ſame line on the ſtarboard-tack, as brought to action by the oppoſite line *b*. The plan of theſe ſquadrons, A B, appears immediately below.

It is neceſſary to remark here, that a fleet frequently retains the order of the ſame tack, occaſionally, when the whole fleet goes about at once, as expreſſed by *a*, fig. 9. of which A is the plan. Or it goes about gradually; the headmoſt ſhip having *tacked* firſt, and the next tacked as ſoon as ſhe arrived in her wake: the reſt following the ſame example. See *c*, fig. 7. and C in the plan of the ſame figure.

It alſo frequently preſerves the order of the line cloſe-hauled, although ſteering with a large wind, either in purſuit of a flying enemy, or proceeding in a particular courſe. Thus the fleet *b*, fig. 10. although ranged ſo as to be in a line upon the larboard-tack, if cloſe to the wind, is chaſing the fleet *a* to leeward, which is either parallel to the former and preſerving the ſame order, or ſails on a line abreaſt, as expreſſed by the plan C. See alſo the article ABREAST.

Fig. 11 exhibits a fleet formed into a line, on the ſtarboard-tack, bearing away upon the continuation of the ſame line aſtern. Thus ſuppoſing them to be formed on the ſtarboard-tack, and ſailing due north, in a line ahead; it is evident that every ſhip, at one and the ſame time, bears away and ſteers ſouth, the whole fleet will again be upon a line ahead, with the wind upon the larboard-quarter, as expreſſed in this figure, and in the plan under it.

Fig. 12 repreſents a fleet bearing away, and having half of it's ſhips ranged on the ſtarboard-tack, and the other half on the larboard-tack, ſo as to form

the

the two ſides of the angle *b c a*, of which the commander in chief *a* makes the central point. This diſpoſition is ſometimes uſed to force through a paſſage which is guarded by an enemy. See alſo the plan thereof, A B C below, where it is evident that the admiral is the foremoſt ſhip, whilſt bearing away, although ſhe would be the laſt in both lines, if they were cloſe-hauled.

Fig. 13 expreſſes the order of retreat, which is frequently practiſed by the French, and is directly the reverſe of this; becauſe the angular point is furtheſt to leeward in the former, whereas it is to windward of both lines in the latter; being alſo the headmoſt of both, when cloſe-hauled, although the ſternmoſt ſhip while they are bearing away.

In an engagement, the ſhips are generally *brought to*, with the main top-ſails laid aback, and their fore-top-ſails full, for the purpoſe of bearing away more readily, when occaſion requires. This diſpoſition of the ſails is repreſented in fig. 13. plate III. See alſo LYING-TO.

The line is ſaid to be formed abreaſt, when the ſhips ſides are all parallel to each other, on a line which croſſes their keels at right angles. This is more frequently uſed in purſuing or retreating, with the wind right aft, ſo that the line forms a perpendicular with the direction of the wind, as exhibited by the ſhips C, in the plan annexed to fig. 10.

LINE is alſo a name given to ſeveral ſmall cords, of different ſizes, and uſed for various purpoſes at ſea; as houſe-line, marline, rattling-line, &c. See thoſe articles.

LINTSTOCK, (*baton à meche*, or *boute-feu*, Fr.) a ſtaff about three feet long, having a ſharp point at one end, and a ſort of fork or crotch on the other; the latter of which ſerves to contain a lighted match, and by the former the lintſtock is occaſionally ſtuck in the deck, in an upright poſition. It is frequently uſed in ſmall veſſels, in an engagement, where there is commonly one fixed between every two guns, by which the match is always kept dry and ready for firing.

LOADING. See the articles CARGO and LADING.

Shot-LOCKER. See GARLAND.

LOG, a machine uſed to meaſure the ſhip's head-way, or the rate of her velocity as ſhe advances through the ſea. It is compoſed of a reel and line, to which is fixed a ſmall piece of wood, forming the quadrant of a circle. The term log however is more particularly applied to the latter.

The log, fig. 14, plate V. is generally about a quarter of an inch thick, and five or ſix inches from the angular point *a* to the circumference *b*. It is balanced by a thin plate of lead, nailed upon the arch, ſo as to ſwim perpendicularly in the water, with about $\frac{2}{3}$ impreſſed under the ſurface. The line is faſtened to the log by means of two legs *a* and *b*, fig. 15, one of which paſſes thro' a hole *a* at the corner, and is knotted on the oppoſite ſide; whilſt the other leg is attached to the arch by a pin *b*, fixed in another hole, ſo as to draw out occaſionally. By theſe legs the log is hung in equilibrio, and the line, which is united to it, is divided into certain ſpaces, which are in proportion to an equal

equal number of geographical miles, as a half minute or quarter minute is to an hour of time.

This inſtrument is employed to meaſure the ſhip's courſe in the following manner: The reel, fig. 16, about which the log-line is wound, being held by one man, and the half-minute glaſs by another, the mate of the watch at the ſame time fixes the pin, and throws the log over the ſtern, which, ſwimming perpendicularly in the ſea, feels an immediate reſiſtance as the ſhip advances. To prevent the pin from being drawn by the effort of this reſiſtance, the perſon who heaves the log continually ſlackens the line over the ſtern, or quarter, ſo that it becomes almoſt ſtreight on the water, and the log continues nearly in the ſame place where it firſt alighted, and is conſidered as fixed therein. The knots are meaſured from a mark faſtened at the diſtance of 12 or 15 fathoms from the log; the glaſs is therefore turned at the inſtant when this mark paſſes over the ſtern, and as ſoon as the glaſs runs out, the line is accordingly ſtopped; when the water, acting forcibly on the ſurface of the log, immediately diſlodges the pin, ſo that the log, no longer reſiſting the effort of the water, is eaſily drawn aboard. The degree of the ſhip's velocity is then readily determined, by examining the number of knots neareſt to that part of the line, where it was ſtopped at the expiration of the glaſs, as the knots increaſe in their natural order from the mark above-mentioned. The ſpace comprehended between that mark and the log is uſed to let the latter be far enough aſtern, to be out of the eddy of the ſhip's *wake* when the glaſs is turned.

If the glaſs runs thirty ſeconds, the diſtance between the knots ſhould be fifty feet. When it runs more or leſs, it ſhould therefore be corrected by the following analogy: As 30 is to 50, ſo is the number of ſeconds of the glaſs to the diſtance between the knots upon the line. As the heat or moiſture of the weather has often a conſiderable effect on the glaſs, ſo as to make it run ſlower or faſter, it ſhould be frequently tried by the vibrations of a pendulum. The line, being alſo liable to relax or ſhrink from the ſame cauſe, ought likewiſe to be meaſured, as occaſion requires.

It is uſual to heave the log once every hour in ſhips of war and Eaſt-Indiamen; and in all other veſſels, once in two hours; and if at any time of the watch, the wind has increaſed or abated in the intervals, ſo as to affect the ſhip's velocity, the officer generally makes a ſuitable allowance for it, at the cloſe of the watch.

LOG-BOARD, a ſort of table, divided into ſeveral columns, containing the hours of the day and night, the direction of the winds, the courſe of the ſhip, and all the material occurrences that happen during the twenty-four hours, or from noon to noon; together with the latitude by obſervation. From this table the different officers of the ſhip are furniſhed with materials to compile their journals, wherein they likewiſe inſert whatever may have been omitted; or reject what may appear ſuperfluous in the log-board. See the article JOURNAL.

LOG-BOOK, a book into which the contents of the log-board is daily copied at noon, together with every circumſtance deſerving notice, that may

happen

happen to the ſhip, or within her cognizance, either at ſea or in a harbour, &c. The intermediate diviſions or watches of the log-book, containing four hours each, are uſually ſigned by the commanding officer thereof, in ſhips of war or Eaſt-Indiamen.

LONG-BOAT, (*double-chaloupe*, or *barque longue*, Fr.) the largeſt and ſtrongeſt boat belonging to any ſhip. It is principally employed to carry great burthens, as anchors, cables, ballaſt, &c. See the article BOAT.

LOOF, the after-part of a ſhip's bow; or that part of her ſide forward where the planks begin to be incurvated into an arch, as they approach the *ſtem*.

LOOK-OUT, *découverte*, Fr.) a watchful attention to ſome important object, or event, which is expected to ariſe from the preſent ſituation of a ſhip, &c. It is principally uſed in navigation, when there is a probability of danger from the real or ſuppoſed proximity of land, rocks, enemies, and, in ſhort, whatever peril ſhe may encounter, through inattention, which might otherwiſe have been avoided by a prudent and neceſſary vigilance.

There is always a look-out kept on a ſhip's forecaſtle at ſea, to watch for any dangerous objects lying near her track, and to which ſhe makes a gradual approach as ſhe advances: the mate of the watch accordingly calls often from the quarter-deck, "Look out afore there!" to the perſons appointed to this ſervice.

LOOMING, an indiſtinct appearance of any diſtant object, as the ſea-coaſt, ſhips, mountains, &c. as, "ſhe looms large afore the wind; the looming of the land is high above the water," &c.

LOOP-HOLES, (*meurtrieres*, Fr.) certain ſmall apertures, formed in the *bulk-heads* and other parts of a merchant-ſhip, through which the ſmall arms are fired on an enemy who boards her.

To LOOSE, (*deferler*, Fr.) to unfurl or caſt looſe any ſail, in order to be *ſet*, or dried, after rainy weather.

LOST, (*paſſé*, Fr.) the ſtate of being foundered or caſt away; expreſſed of a ſhip when ſhe has either ſunk at ſea, or ſtruck upon a rock, ſhelf, or lee-ſhore, where ſhe has beat to pieces by the violence of the ſea.

LOW-WATER, that ſtate of the tide, in which the reflux has fallen to it's greateſt depreſſion from the ſea-coaſts, or rivers of any country. See the article TIDE.

To LOWER, (*amener*, Fr.) to eaſe down gradually, expreſſed of ſome weighty body, which is ſuſpended by tackles, or other ropes, which, being ſlackened, ſuffer the ſaid body to deſcend as ſlowly or expeditiouſly as the occaſion requires. Hence

LOWER *handſomely!* and *lower cheerly!* are oppoſed to each other, the former being the order to lower gradually, and the latter to lower expeditiouſly.

LUFF, (*lof*, Fr.) the order from the pilot to the ſteerſman to put the helm towards the *lee*-ſide of the ſhip, in order to make the ſhip ſail nearer the direction of the wind. Hence, luff round, or luff alee, (*envoie lof tout*,

tout, Fr.) the exceſs of this movement, by which it is intended to throw the ſhip's head up in the wind, in order to tack her, &c.

A ſhip is accordingly ſaid to ſpring her luff, (*faire une olofée*, Fr.) when ſhe yields to the effort of the helm, by ſailing nearer to the line of the wind than ſhe had done before. See alſo HAULING *the wind*, and STEERING.

LUFF-TACKLE, a name given by ſailors to any large tackle that is not deſtined for a particular place, but may be variouſly employed as occaſion requires. It is generally ſomewhat larger than the *jigger-tackle*, although ſmaller than thoſe which ſerve to hoiſt the heavier materials into and out of the veſſel: which latter are the main and fore-tackles, the ſtay and quarter-tackles, &c.

LUG-SAIL, *treou*, Fr.) a ſquare ſail, hoiſted occaſionally on the maſt of a boat, or ſmall veſſel, upon a yard which hangs nearly at right angles with the maſt. Theſe are more particularly uſed in the barca longas, navigated by the Spaniards in the Mediterranean.

LYING-TO, or LYING-BY, (*en panne*, Fr.) the ſituation of a ſhip when ſhe is retarded in her courſe, by arranging the ſails in ſuch a manner as to counteract each other with nearly an equal effort, and render the ſhip almoſt immoveable, with reſpect to her progreſſive motion, or *head-way*. A ſhip is uſually *brought-to* by the main and fore-top-ſails, one of which is laid *aback*, whilſt the other is full; ſo that the latter puſhes the ſhip forward, whilſt the former reſiſts this impulſe, by forcing her aſtern. This is particularly practiſed in a general engagement, when the hoſtile fleets are drawn up in two lines of battle oppoſite each other. It is alſo uſed to wait for ſome other ſhip, either approaching or expected; or to avoid purſuing a dangerous courſe, eſpecially in dark or foggy weather, &c.

LYING-TO *in a ſtorm*. See the article TRYING.

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MAGAZINE, (*ſoute au poudres*, Fr.) a cloſe room or ſtore-houſe, built in the fore, or after-part of a ſhip's hold, to contain the gunpowder uſed in battle, &c. This apartment is ſtrongly ſecured againſt fire, and no perſon is ſuffered to enter it with a lamp or candle: it is therefore lighted, as occaſion requires, by means of the candles or lamps which are fixed in the *light-room* contiguous to it. See that article.

MAGNET. See the article COMPASS.

MAIN, an epithet uſually applied by ſailors to whatever is principal, as oppoſed to what is inferior or ſecondary. Thus the main land is uſed in contradiſtinction to an iſland or peninſula; and the main-maſt, the main-wale, the main-keel, and the main-hatchway, are in like manner diſtinguiſhed from the fore and mizen-maſts, the channel-wales, the falſe-keel, and the fore and after-hatchways, &c.

As the ſails, yards, and rigging of the main-maſt, are all deſcribed in their proper places, namely, under thoſe particular articles, to which the reader is referred, it will be unneceſſary to ſay any thing further of them here.

To MAKE, is variouſly applied, in the ſea-language, to the land, to the ſails, to the ſhip's courſe, &c.

To MAKE *a good board.* See the article BOARD.

To MAKE *the land*, (*decouvrir*, Fr.) is to diſcover it from a diſtant ſituation, in conſequence of approaching it after a ſea-voyage: as, "In your "paſſage to cape Tiburon, it will be neceſſary to make Turk's Iſland."

To MAKE *fail*, (*faire plus de voiles*, Fr.) is to increaſe the quantity of ſail already extended, either by letting out the *reefs*, and by hoiſting an additional number of ſmall ſails, or by performing either of thoſe exerciſes ſeparately.

To MAKE *ſternway*, (*aller en arriere*, Fr.) is to retreat or move with the ſtern foremoſt.

To MAKE *water*, (*faire eau*, Fr.) uſually ſignifies to leak, unleſs when the epithet *foul* is added thereto. A ſhip is ſaid to make foul water, when running in ſhallow water, her keel diſturbs and looſens the mud or ooze, lying at the bottom thereof.

MALLET, a ſort of wooden hammer, of which there are ſeveral ſorts uſed for different purpoſes on ſhip-board, as the

Caulking-MALLET, an implement chiefly employed to drive the oakum into the *ſeams* of a ſhip, where the edges of the planks are joined to each other in the ſides, decks, or bottom.

The head of this mallet is long and cylindrical, being hooped with iron to prevent it from ſplitting in the exerciſe of caulking.

Serving-MALLET, a mallet uſed in *ſerving* the rigging, by binding the ſpun-yarn more firmly about it, than could poſſibly be done by hand; which is performed in the following manner: two or three turns of the ſpun-yarn, which has been previouſly rolled up in a large ball, or clue, are paſſed about the rope and about the body of the mallet, which for this purpoſe is furniſhed with a round channel in it's ſurface, that conforms to the convexity of the rope intended to be ſerved. The turns of the ſpun-yarn being ſtrained round the mallet ſo as to confine it firmly to the rope, which is extended above the deck, one man paſſes the ball continually about the rope, whilſt the other, at the ſame time, winds on the ſpun-yarn by means of the mallet, whoſe handle, acting as a lever, ſtrains every turn about the rope as firm as poſſible.

MANGER, (*gatte*, Fr.) a ſmall apartment, extending athwart the lower-deck of a ſhip of war, immediately within the hawſe-holes, and fenced on the after-part by a partition, which ſeparates it from the other part of the deck behind it,

This partition ſerves as a fence to interrupt the paſſage of the water, which occaſionally guſhes in at the hawſe-holes, or falls from the wet cable whilſt it is heaved in by the capſtern. The water, thus prevented from running aft, is immediately returned into the ſea, by ſeveral ſmall channels, called *ſcuppers*, cut through the ſhip's ſide within the manger.

The manger is therefore particularly uſeful in giving a contrary direction to the water that enters at the hawſe-holes, which would otherwiſe run aft in great ſtreams upon the lower deck, and render it extremely wet and uncomfortable, particularly in tempeſtuous weather, to the men who meſs and ſleep in different parts thereof.

MARINE, a general name for the navy of a kingdom or ſtate; as alſo the whole œconomy of naval affairs; or whatever reſpects the building, rigging, arming, equipping, navigating, and fighting ſhips. It comprehends alſo the government of naval armaments, and the ſtate of all the perſons employed therein, whether civil or military.

MARINE, or MARINE-FORCES, a body of troops employed in the ſea-ſervice, under the direction of the lords of the admiralty.

MARLINE, (*merlin*, Fr.) a ſmall line, ſomewhat leſs than houſe-line, and uſed for the ſame purpoſes. See HOUSE-LINE.

MARLING, the act of winding any ſmall-line, as marline, ſpun-yarn, packthread, &c. about a rope, ſo that every turn is ſecured by a ſort of knot, ſo as to remain fixed in caſe all the reſt ſhould be cut through by friction, &c. This expedient is much preferable to the winding a line ſpirally about a rope for the ſame purpoſe, becauſe as the turns are at ſome diſtance from each other, the ſame quantity of line will ſerve for the one method as the other; with this difference, that if one of the ſpiral turns are cut through, the whole will be rendered uſeleſs, whereas by marling, this is entirely prevented.

Marling is commonly uſed to faſten ſlips of canvas, called *parſling*, upon the ſurface of a rope, to prevent it from being galled by another rope that rubs againſt it, to attach the foot of a ſail to it's bolt-rope, &c.

MARLING-SPIKE, (*epiſſoir*, Fr.) an iron pin, tapering to a point, and furniſhed with a large round head. It is principally uſed to penetrate the twiſts, or ſtrands of a rope, in order to introduce the ends of ſome other through the intervals, in the act of *knotting* or *ſplicing*.

It is alſo uſed as a lever, on many other occaſions, about the rigging, particularly in fixing the ſeizings upon the *ſhrouds*, *block-ſtrops*, *clues* of the ſails, &c.

To MAROON, (*deſerter*, Fr.) to put one or more ſailors aſhore upon a deſolate iſland, under pretence of their having committed ſome great crime. This deteſtable expedient has been repeatedly practiſed by ſome inhuman commanders of merchant-ſhips, particularly in the Weſt-Indies.

MAST, (*mât*, Fr.) a long round piece of timber, elevated perpendicularly upon the keel of a ſhip, to which are attached the yards, the ſails, and the rigging.

A maſt, with regard to it's length, is either formed of one ſingle piece, which is called a *pole-maſt*, or compoſed of ſeveral pieces joined together, each of which retains the name of maſt ſeparately. The loweſt of theſe is accordingly named the lower-maſt, *a*, fig. 1. plate VI. the next in heighth is the top-maſt, *b*, which is erected at the head of the former; and the higheſt is the top-gallant-maſt, *c*, which is prolonged from the upper end of the top-maſt. Thus the two laſt are no other than a continuation of the firſt upwards.

The lower maſt is fixed in the ſhip by an apparatus, deſcribed in the articles *hulk* and *ſheers*: the foot, or heel of it, reſts in a block of timber called the ſtep, which is fixed upon the *kelſon*; and the top-maſt is attached to the head of it by the *cap* and the *treſtle-trees*. The latter of theſe are two ſtrong bars of timber, ſupported by two prominencies, which are as ſhoulders on the oppoſite ſides of the maſt, a little under it's upper end: athwart theſe bars are fixed the *croſs-trees*, upon which the frame of the top is ſupported. Between the lower maſt-head, and the foremoſt of the croſs-trees, a ſquare ſpace remains vacant, the ſides of which are bounded by the two treſtle-trees. Perpendicularly above this is the foremoſt hole in the cap, whoſe after-hole is ſolidly fixed on the head of the lower-maſt. The top-maſt is erected by a tackle, whoſe effort is communicated from the head of the lower-maſt to the foot of the top-maſt; and the upper end of the latter is accordingly guided into, and conveyed up through, the holes between the treſtle-trees and the cap, as above mentioned. The machinery by which it is elevated, or, according to the ſea-phraſe, *ſwayed-up*, is fixed in the following manner: the top-rope *d*, fig. 2. paſſing through a block *e*, which is hooked on one ſide of the cap, and afterwards through a hole, furniſhed with a ſheave or pully *f*, on the lower end of the top-maſt, is again brought upwards on the other ſide of the maſt, where it is at length faſtened to an eye-bolt in the cap *g*, which is always on the ſide oppoſite to the top-block *e*. To the lower end

of

of the top-rope is fixed the top-tackle *h*, the effort of which being tranſmitted to the top-rope *d*, and thence to the heel of the top-maſt *f*, neceſſarily lifts the latter upwards, parallel to the lower-maſt. When the top-maſt is raiſed to it's proper heighth, fig. 3. the lower end of it becomes firmly wedged in the ſquare hole, above deſcribed, between the treſtle-trees. A bar of wood, or iron, called the *fid*, is then thruſt through a hole *i* in the heel of it, acroſs the treſtle-trees, by which the whole weight of the top-maſt is ſupported.

In the ſame manner as the top-maſt is retained at the head of the lower-maſt, the top-gallant-maſt is erected, and fixed at the head of the top-maſt.

Beſides the parts already mentioned in the conſtruction of maſts, with reſpect to their length, the lower-maſts of the largeſt ſhips are compoſed of ſeveral pieces united into one body. As theſe are generally the moſt ſubſtantial parts of various trees, a maſt, formed by this aſſemblage, is juſtly eſteemed much ſtronger than one conſiſting of any ſingle trunk, whoſe internal ſolidity may be very uncertain. The ſeveral pieces are formed and joined together, as repreſented in the ſection of a lower-maſt of this ſort, fig. 4. plate VI. where *a* is the ſhaft, or principal piece into which the reſt are fixed, with their ſides or faces cloſe to each other. The whole is ſecured by ſeveral ſtrong hoops of iron, driven on the outſide of the maſt, *a*, fig. 1. where they remain at proper diſtances.

The principal articles to be conſidered in equipping a ſhip with maſts are, 1ſt, the number; 2d, their ſituation in the veſſel; and 3d, their heighth above the water.

The maſts being uſed to extend the ſails by means of their yards, it is evident that if their number were multiplied beyond what is neceſſary, the yards muſt be extremely ſhort, that they may not entangle each other in *working* the ſhip, and by conſequence their ſails will be very narrow, and receive a ſmall portion of wind. If, on the contrary, there is not a ſufficient number of maſts in the veſſel, the yards will be too large and heavy, ſo as not to be managed without difficulty. There is a mean between theſe extremes, which experience and the general practice of the ſea have determined; by which it appears, that in large ſhips, every advantage of ſailing is retained by three maſts and a bowſprit.

The moſt advantageous poſition of the maſts is undoubtedly that from whence there reſults an equilibrium between the reſiſtance of the water, on the body of the ſhip, on one part, and of the direction of their effort on the other. By every other poſition this equilibrium is deſtroyed, and the greateſt effort of the maſts will operate to turn the ſhip horizontally about it's direction; a circumſtance which retards her velocity. It is counterbalanced indeed by the helm; but the ſame inconvenience ſtill continues; for the force of the wind, having the reſiſtance of the helm to overcome, is not intirely employed to puſh the veſſel forward. The axis of the reſiſtance of the water ſhould then be previouſly determined, to diſcover the place of the *main-maſt*, in order to ſuſpend the efforts of the water equally, and place the other maſts ſo as that their particular direction will coincide with that of the main-maſt. The whole of this would be capable of a ſolution if the figure of the veſſel were regular,

regular, becauſe the point, about which the reſiſtance of the water would be in equilibrium, might be diſcovered by calculation.

But when the real figure of the ſhip is conſidered, theſe flattering ideas will inſtantly vaniſh. This obſervation induced M. Saverien to employ a mechanical method to diſcover the axis of reſiſtance of the water, which he apprehended might be uſed with ſucceſs in the manner following.

When the veſſel is launched, before the places of the maſts are determined, extend a rope A B, fig. 5. plate VI. from the head to the ſtern. To the extremities A and B attach two other ropes A D, B C, and apply to the other ends of theſe ropes two mechanical powers, to draw the ſhip according to the direction B C, parallel to itſelf. The whole being thus diſpoſed, let a moveable tube Z, fixed upon the rope A B, have another rope Z R attached to it, whoſe other end communicates with a mechanical power R, equal to the two powers D and C. This laſt being applied to the ſame veſſel, in ſuch manner as to take off the effects of the two others by ſliding upon the rope A B, ſo as to diſcover ſome point Z, by the parallelifm of the ropes A D B C feebly extended with the rope Z R; the line Z R will be the axis of the equilibrium of the water's reſiſtance, and by conſequence the main-maſt ſhould be planted in the point Z.

The figures E, E, E, are three windlaſſes on the ſhore, by which this experiment is applied.

With regard to the ſituation of the other maſts, it is neceſſary, in the ſame manner, to diſcover two points; ſo that the direction of the two mechanical powers operating, will be parallel to the axis of reſiſtance R Z already found.

The exact heighth of the maſts, in proportion to the form and ſize of the ſhip, remains yet a problem to be determined. The more the maſts are elevated above the center of gravity, the greater will be the ſurface of ſail, which they are enabled to preſent to the wind; ſo far an additional heighth ſeems to be advantageous. But this advantage is diminiſhed by the circular movement of the maſt, which operates to make the veſſel ſtoop to it's effort; and this inclination is increaſed, in proportion to the additional heighth of the maſt; an inconvenience which it is neceſſary to guard againſt. Thus what is gained upon one hand is loſt upon the other. To reconcile theſe differences, it is certain, that the heighth of the maſt ought to be determined by the inclination of the veſſel, and that the point of her greateſt inclination ſhould be the term of this heighth, above the center of gravity. See the article TRIM.

With regard to the general practice of determining the heighth of the maſts, according to the different rates of the ſhips in the royal navy, the reader is referred to the article SAIL.

In order to ſecure the maſts, and counterbalance the ſtrain they receive from the effort of the ſails impreſſed by the wind, and the agitation of the ſhip at ſea, they are ſuſtained by ſeveral ſtrong ropes, extended from their upper-ends to the outſide of the veſſel, called *ſhrouds*, ſee fig. 5. plate VI. They are further ſupported by other ropes, ſtretched from their heads towards the fore-part of the veſſel. See RIGGING.

The

The maſt, which is placed at the middle of the ſhip's length, is called the main-maſt, (*grand-mât*, Fr.) that which is placed in the fore-part, the fore-maſt, (*mât de miſaine*, Fr.) and that which is towards the ſtern is termed the mizen-maſt, (*mât d'artimon*, Fr.)

N. B. *Mizen* is applied to this laſt maſt by all the nations of Europe, except the French, who alone call the fore-maſt *miſaine*.

MASTER *of a ſhip of war*, (*maître*, Fr.) an officer appointed by the commiſſioners of the navy to aſſiſt in fitting, and to take charge of the navigating and conducting a ſhip from port to port, under the direction of the captain, or other his ſuperior officer. The management and diſpoſition of the ſails, the working of the ſhip into her ſtation in the order of battle, and the direction of her movements in the time of action, and in the other circumſtances of danger, are alſo more particularly under his inſpection. He is to be careful that the rigging, ſails, and ſtores, be duly preſerved: to ſee that the log and log-book be regularly and correctly kept: accurately to obſerve the appearances of coaſts, rocks, and ſhoals, with their depths of water and bearings, noting them in his journal. He is to keep the hawſer clear when the ſhip is at anchor, and to provide himſelf with proper inſtruments, maps, and books of navigation. It is likewiſe his duty to examine the proviſions, and accordingly to admit none into the ſhip but ſuch as are ſound, ſweet, and wholeſome. He is moreover charged with the *ſtowage*, or diſpoſition of theſe materials in the ſhip's hold. And when ſhe ſhall be laid-up, he is to depoſite a copy of the log-book and journal with the commiſſioners of the navy. And to enable him the better to perform theſe ſervices, he is allowed ſeveral aſſiſtants, who are properly termed mates and quarter-maſters. See thoſe articles.

MASTER *of a merchant-ſhip*, the commanding officer, who is appointed by the merchants to manage the navigation and every thing relating to her cargo, voyage, ſailors, &c.

MASTER *at arms*, an officer appointed by warrant from the board of admiralty, to teach the officers and crew of a ſhip of war the exerciſe of ſmall arms; to confine and plant centinels over the priſoners, and ſuperintend whatever relates to them during their confinement. He is alſo, as ſoon as the evening gun ſhall be fired, to ſee all the fires and lights extinguiſhed, except ſuch as ſhall be permitted by proper authority, or under the inſpection of centinels. It is likewiſe his duty to attend the *gangway*, when any boats arrive aboard, and ſearch them carefully, together with their rowers, that no ſpirituous liquors may be conveyed into the ſhip, unleſs by permiſſion of the commanding officer. He is to ſee that the ſmall arms be kept in proper order. He is to viſit all veſſels coming to or going from the ſhip, and prevent the crew from going from the ſhip without leave. He is alſo to acquaint the officer of the watch with all irregularities in the ſhip which ſhall come to his knowledge. In theſe ſeveral duties he is aſſiſted with proper attendants, called his corporals, who alſo relieve the centinels, and one another, at certain periods.

MASTER-*attendant*, an officer in the royal dock-yards, appointed to haſten, and aſſiſt at, the fitting out or diſmantling, removing or ſecuring veſſels of

war,

war, &c. at the port where he reſides. He is particularly to obſerve, that his majeſty's ſhips are ſecurely moored; and for this purpoſe he is expected frequently to review the *moorings* which are ſunk in the harbour, and obſerve that they are kept in proper repair to be always ready when occaſion requires. It is alſo his duty to viſit all the ſhips in *ordinary*, and ſee that they are frequently cleaned and kept in order; and to attend at the general muſters in the dock-yards, taking care that all the officers, artificers, and labourers, regiſtered in the navy-books, are preſent at their duty.

MAT, *(couſſin*, Fr.) a ſort of thick web or texture, formed of ſpun-yarn, or of a variety of *ſtrands*, or ſeparate parts of a ſmall rope; or of a number of rope-yarns twiſted into *foxes*. The foxes are therefore larger or ſmaller, as containing a greater or leſſer number of rope-yarns, in proportion to the thickneſs of the mat intended to be woven.

Mats are commonly uſed to faſten upon the outſide of ſuch parts of the ſtanding rigging as are expoſed to the friction of other ropes, in extending, ſhifting, or truſſing up the ſails, particularly the lower ones. The largeſt and ſtrongeſt ſort of theſe mats are called *pauches*.

MATE *of a ſhip of war*, an officer under the direction of the maſter, by whoſe choice he is generally appointed, to aſſiſt him in the ſeveral branches of his duty. Accordingly he is to be particularly attentive to the navigation in his watch, &c. to keep the *log* regularly, and examine the line and glaſſes by which the ſhip's courſe is meaſured, and to adjuſt the ſails to the wind in the fore-part of the ſhip. He is alſo to have a diligent attention to the cables, ſeeing that they are well *coiled* and kept clean when laid in the *tier*, and ſufficiently *ſerved* when employed to ride the ſhip. Finally, he is to ſuperintend and aſſiſt at the ſtowage of the hold, taking eſpecial care that all the ballaſt and proviſions are properly ſtowed therein.

MATE *of a merchant-ſhip*, the officer who commands in the abſence of the maſter thereof, and ſhares the duty with him at ſea; being charged with every thing that regards the internal management of the ſhip, the directing her courſe, and the government of her crew.

The number of mates allowed to ſhips of war and merchantmen is always in proportion to the ſize of the veſſel. Thus a firſt-rate man of war has ſix mates, and an Eaſt-Indiaman the ſame number; a frigate of 20 guns, and a ſmall merchant-ſhip, have only one mate in each: and the intermediate ſhips have a greater or ſmaller number, according to their ſeveral ſizes, or to the ſervices on which they are employed.

METEOR. See CORPOSANT, and WATER-SPOUT.

MESS, a particular company of the officers or crew of a ſhip, who eat, drink, and aſſociate together.

MESS-MATE, a companion or aſſociate of the above diviſion. See the article BIRTH.

MIDSHIP, *(maître*, Fr.) a term of diſtinction, applied by ſhipwrights to ſeveral pieces of timber which lie in the broadeſt part of a veſſel; as,

MIDSHIP-BEAM, *(maître-bau*, Fr.) the beam upon which the extreme breadth of a ſhip is formed, and which is ſituated in the *midſhip-frame*, nearly

in

in the middle of her length, ſerving as a ſtandard from whence the dimenſions and proportions of the maſts and yards are to be taken.

MIDSHIP-FRAME, (*maître-couple*, Fr.) a name given to that timber, or combination of pieces, formed into one timber, which determines the extreme breadth of the ſhip, as well as the figure and dimenſion of all the inferior timbers.

In the 8th page, from the beginning of the article *Naval* ARCHITECTURE, the reader will find a full explanation of what is meant by a frame of timbers. He will alſo perceive the out-lines of all the principal frames, with their gradual dimenſions, from the midſhip-frame delineated in the plane of projection annexed to that article. As the parts, of which the ſeveral frames are compoſed, have the ſame relation to each other throughout the veſſel; and as all the correſponding pieces, without and within thoſe frames, are alſo nearly alike, and fixed in the ſame manner, it will be ſufficient for our purpoſe to repreſent the principal, or midſhip-frame, together with it's correſponding parts, which are as follow:

Explanation of the MIDSHIP-FRAME, plate VII. which exhibits a tranſverſe ſection of a 74 gun ſhip, at the broadeſt part, anſwering to the ſame ſcale by which are delineated the head, quarter, and ſtern of a ſhip, of the ſame ſize, in plates IV. VIII. and X. to which the reader is referred.

A the keel, with *a* the falſe keel beneath it.

B the chocks fixed upon the kelſon, to retain the oppoſite pieces of the *riders* firmly together.

C one of the beams of the orlop.

D one of the lower-deck beams; with *d* the beams of the upper-deck.

E the hanging-knees, by which the beams are attached to the timbers.

F the ſtandards, which are fixed above the decks to which they belong.

G the clamps, which ſuſtain the extremities of the beams.

H the gun-ports of the lower-deck; with *h* the ports of the upper-deck.

I, K, L different pieces of *thick-ſtuff*, placed oppoſite to the ſeveral ſcarfs, or joinings, in the frame of timbers.

M the planks of the deck.

N the water-ways.

O the planks of the cieling, between the ſeveral ranges of thick-ſtuff.

P the ſpirketing.

Q the main-wale, to fortify the ſhip's ſide oppoſite to the lower-deck.

R the channel-wale, oppoſite to the upper-deck.

S the waiſt-rail.

T the ſtring, with the moulding under the gun-wale.

U the floor-timbers, which are laid acroſs the keel, and bolted to it.

V the ſeveral futtocks; and W the top-timbers, which are all united into one frame.

X the kelſon.

MIDSHIPMAN, a ſort of naval cadet, appointed by the captain of a ſhip of war, to ſecond the orders of the ſuperior officers, and aſſiſt in the neceſſary buſineſs of the veſſel, either aboard or aſhore.

The number of midſhipmen, like that of ſeveral other officers, is always in proportion to the ſize of the ſhip to which they belong. Thus a firſt-rate man of war has twenty-four, and the inferior rates a ſuitable number in proportion. No perſon can be appointed lieutenant, without having previouſly ſerved two years in the royal navy in this capacity, or in that of *mate*, beſides having been at leaſt four years in actual ſervice at ſea, either in merchant-ſhips, or in the royal navy.

Midſhipman is accordingly the ſtation in which a young volunteer is trained in the ſeveral exerciſes, neceſſary to attain a ſufficient knowledge of the machinery, diſcipline, movements, and military operations of a ſhip, to qualify him for a ſea-officer.

As the chief object of our attention has been to facilitate the acquiſition of this intelligence, we have endeavoured to treat thoſe ſubjects at large, in the different parts of this work, according to their importance. We have alſo ſketched the general outlines of the reſpective charges of all the ſuperior officers, which, in conformity to the plan of this work, become previous to this article. Thus the duties of the admiral, the captain, the lieutenant, and the maſter, are already explained in their proper places; and whatever intelligence appears neceſſary to diſcharge thoſe offices, is alſo, in a high degree, eſſential to the midſhipman. Thoſe officers indeed, as well as many others, are furniſhed with ſuitable inſtructions to regulate their conduct; but the midſhipman, being inveſted with no particular charge from the government, is by conſequence omitted in thoſe official regulations. In a work of this kind, however, the importance of the ſubject is not always determined by the ſuperiority of rank or ſtation. If our province is to communicate inſtruction, thoſe who are the leaſt informed are certainly the principal objects thereof, and to them our attention is more peculiarly directed. Hence the extent of our deſign comprehends many circumſtances which would be immaterial in general orders and regulations; and hence abundance of particular directions to reſpective officers, inſerted in thoſe general regulations, are rejected here as foreign to our purpoſe. Averſe as we are, on other occaſions, to offend the rigid nicety of a critic, by introducing moral reflections, in a performance dedicated to ſcientifical deſcription, we muſt for once be indulged with a ſhort deviation from the plan hitherto invariably followed. Happy! if our efforts may in any degree operate to produce the effects for which they were calculated.

On his firſt entrance in a ſhip of war, every midſhipman has ſeveral diſadvantageous circumſtances to encounter. Theſe are partly occaſioned by the nature of the ſea-ſervice, and partly by the miſtaken prejudices of people in general, reſpecting naval diſcipline, and the genius of ſailors and their officers. No character, in their opinion, is more excellent than that of the common ſailor, whom they generally ſuppoſe to be treated with great ſeverity by his officers, drawing a compariſon between them not very advantageous to the latter. The midſhipman uſually comes aboard tinctured with theſe prejudices, eſpecially if his education has been amongſt the higher rank of people; and if the officers happen to anſwer his opinion, he conceives an early diſguſt to the ſervice, from a very partial and incompetent

petent view of it's operations. Blinded by theſe prepoſſeſſions, he is thrown off his guard, and very ſoon ſurprized to find, amongſt thoſe honeſt ſailors, a crew of abandoned miſcreants, ripe for any miſchief or villainy. Perhaps, after a little obſervation, many of them will appear to him equally deſtitute of gratitude, ſhame, or juſtice, and only deterred from the commiſſion of any crimes by the terror of ſevere puniſhment. He will diſcover, that the pernicious example of a few of the vileſt in a ſhip of war is too often apt to poiſon the principles of the greateſt number, eſpecially if the reins of diſcipline are too much relaxed, ſo as to foſter that idleneſs and diſſipation, which engender ſloth, diſeaſes, and an utter profligacy of manners. If the midſhipman, on many occaſions, is obliged to mix with theſe, particularly in the exerciſes of extending or reducing the ſails in the tops, he ought reſolutely to guard againſt this contagion, with which the morals of his inferiors may be infected. He ſhould however avail himſelf of their knowledge, and acquire their expertneſs in managing and fixing the ſails and rigging, and never ſuffer himſelf to be excelled by an inferior. He will probably find a virtue in almoſt every private ſailor, which is entirely unknown to many of his officers: that virtue is emulation, which is not indeed mentioned amongſt their qualities by the gentlemen of *terra firma*, by whom their characters are often copiouſly deſcribed with very little judgment. There is hardly a common tar who is not envious of ſuperior ſkill in his fellows, and jealous on all occaſions to be out-done in what he conſiders as a branch of his duty! Nor is he more afraid of the dreadful conſequences of whiſtling in a ſtorm, than of being ſtigmatized with the opprobrious epithet of *lubber*. Fortified againſt this ſcandal, by a thorough knowledge of his buſineſs, the ſailor will ſometimes ſneer in private, at the execution of orders, which to him appear aukward, improper, or unlike a ſeaman. Nay, he will perhaps be malicious enough to ſuppreſs his own judgment, and by a punctual obedience to command, execute whatever is to be performed, in a manner which he knows to be improper, in order to expoſe the perſon commanding to diſgrace and ridicule. Little ſkilled in the method of the ſchools, he conſiders the officer who cons his leſſon by rote as very ill qualified for his ſtation, becauſe particular ſituations might render it neceſſary for the ſaid officer to aſſiſt at putting his own orders in practice. An ignorance in this practical knowledge will therefore neceſſarily be thought an unpardonable deficiency by thoſe who are to follow his directions. Hence the midſhipman, who aſſociates with theſe ſailors in the tops, till he has acquired a competent ſkill in the ſervice of extending or reducing the ſails, &c. will be often entertained with a number of ſcurrilous jeſts, at the expence of his ſuperiors. Hence alſo he will learn, that a timely application to thoſe exerciſes can only prevent him from appearing in the ſame deſpicable point of view, which muſt certainly be a cruel mortification to a man of the ſmalleſt ſenſibility.

If the midſhipman is not employed in theſe ſervices, which are undoubtedly neceſſary to give him a clearer idea of the different parts of his occupation, a variety of other objects preſent themſelves to his attention. Without preſuming to dictate the ſtudies which are moſt eſſential to his improvement,

provement, we could wiſh to recommend ſuch as are moſt ſuitable to the bent of his inclination. Aſtronomy, geometry, and mechanics, which are in the firſt rank of ſcience, are the materials which form the ſkilful pilot, and the ſuperior mariner. The theory of navigation is entirely derived from the two former, and all the machinery and movements of a ſhip are founded upon the latter. The action of the wind upon the ſails, and the reſiſtance of the water at the ſtem, naturally dictate an enquiry into the property of ſolids and fluids: and the ſtate of the ſhip, floating on the water, ſeems to direct his application to the ſtudy of hydroſtatics and the effects of gravity. A proficiency in theſe branches of ſcience will equally enlarge his views, with regard to the operations of naval war, as directed by the efforts of powder, and the knowledge of projectiles. The moſt effectual method to excite his application to thoſe ſtudies is, perhaps, by looking round the navy, to obſerve the characters of individuals. By this enquiry he will probably diſcover, that the officer, who is eminently ſkilled in the ſciences, will command univerſal reſpect and approbation; and that whoever is ſatisfied with the deſpicable ambition of ſhining the hero of an aſſembly, will be the object of univerſal contempt. The attention of the former will be engaged in thoſe ſtudies, which are highly uſeful to himſelf in particular, and to the ſervice in general. The employment of the latter is to acquire thoſe ſuperficial accompliſhments, that unbend the mind from every uſeful ſcience, emaſculate the judgment, and render the hero infinitely more dextrous at falling into his ſtation in the dance, than in the line of battle.

Unleſs the midſhipman has an unconquerable averſion to the acquiſition of thoſe qualifications, which are ſo eſſential to his improvement, he will very rarely want opportunities of making a progreſs therein. Every ſtep he advances in thoſe meritorious employments will facilitate his acceſſion to the next in order. If the dunces, who are his officers or meſs-mates, are rattling the dice, roaring bad verſes, hiſſing on the flute, or ſcraping diſcord from the fiddle, his attention to more noble ſtudies will ſweeten the hours of relaxation. He ſhould recollect that no example from fools ought to influence his conduct, or ſeduce him from that laudable ambition which his honour and advantage are equally concerned to purſue.

MIZEN, (*artimon*, Fr. *miſana*, Ital.) the aftermoſt or hindmoſt of the fixed ſails of a ſhip, extended ſometimes by a *gaff*, and ſometimes by a *yard* which croſſes the maſt obliquely; the fore-end reaching almoſt down to the deck, and the after-end being peeked up as high above the middle of the yard, where it is attached to the maſt. The figure of the mizen is accordingly a trapezia, or a parallelogram, one of whoſe corners is cut off by a diagonal, extended from one of it's ſides to the oppoſite corner, which becomes the *peek* of the mizen. See the article SAIL.

MIZEN-MAST, the maſt upon which the mizen and it's top-ſail and ſtay ſails are ſupported, beſides other ſails, which are ſet occaſionally, as the *driver*, ring tail, &c. See the article MAST.

The

The ſhrouds, ſtays, and back-ſtays of this maſt, as well as all the running rigging, together with it's ſeveral yards and ſails, being deſcribed under the articles SHROUD, STAY, YARD, &c. the reader is referred thither for the explanations thereof, which are in general applicable alſo to the ſame furniture of both the other maſts.

MOLE, a name given in the Mediterranean to a long pier, or artificial bulwark of maſonry, extending obliquely acroſs the entrance of a harbour, in order to break the force of the ſea from the veſſels which are anchored within.

MOLE is alſo, although improperly, applied to the harbour or haven, which is formed by the bulwark above deſcribed, which is then denominatd the mole-head.

MONSOON, a name given to the periodical or trade-winds, which blow regularly in certain latitudes of the Indian ocean. They continue five or ſix months invariably in one direction, and then alter their courſe, and blow, during an equal ſpace of time, from a different point of the compaſs with the ſame uniformity.

MOORING, (*amarrage*, Fr.) the act of confining and ſecuring a ſhip in a particular ſtation, by chains or cables, which are either faſtened to the adjacent ſhore, or to anchors in the bottom.

A ſhip may be either moored by the *head*, (*affourcher*, Fr.) or by the head and *ſtern*; that is to ſay, ſhe may be ſecured by anchors before her, without any behind: or ſhe may have anchors out, both before and behind her; or her cables may be attached to poſts, rings, or *moorings*, which anſwer the ſame purpoſe.

When a ſhip is moored by the head with her own anchors, they are diſpoſed according to the circumſtances of the place where ſhe lies, and the time ſhe is to continue therein. Thus wherever a tide ebbs and flows, it is uſual to carry one anchor out towards the flood, and another towards the ebb, particularly where there is little room to range about; and the anchors are laid in the ſame manner, if the veſſel is moored head and-ſtern in the ſame place. The ſituation of the anchors, in a road or bay, is uſually oppoſed to the reigning winds, or thoſe which are moſt dangerous; ſo that the ſhip rides therein with the effort of both her cables. Thus if ſhe rides in a bay, or road, which is expoſed to a northerly wind and heavy ſea from the ſame quarter, the anchors paſſing from the oppoſite *bows* ought to lie eaſt and weſt from each other: hence both the cables will retain the ſhip in her ſtation with equal effort againſt the action of the wind and ſea.

MOORINGS are uſually an aſſemblage of anchors, chains, and *bridles*, laid athwart the bottom of the river, or haven, to ride the ſhipping contained therein.

The anchors, employed on this occaſion, have rarely more than one fluke, which is ſunk in the river near low-water mark. Two anchors, being fixed in this manner, on the oppoſite ſides of the river, are furniſhed with a chain, extending acroſs from one to the other. In the middle of the chain is a large ſquare link, whoſe lower end terminates in a ſwivel, which

turns

turns round in the chain as about an axis, whenever the ſhip veers about with the change of the tide. To this ſwivel-link are attached the bridles, which are ſhort pieces of cable, well ſerved, whoſe upper ends are drawn into the ſhip, at the mooring-ports, and afterwards faſtened to the maſts, or cable-bits.

A great number of moorings, of this ſort, are fixed in the royal ports, or the harbours adjacent to the king's dock-yards, as Deptford, Chatham, Portſmouth, Plymouth, &c.

MORTAR, a piece of artillery, ſhorter and wider than the cannon, and having a chamber different from the ſize of it's bore.

Mortars are uſed in the attack of a fortified place, by ſea, to diſcharge ſhells or carcaſes amongſt the buildings. The ſhell is a great hollow ball, filled with powder, which, falling into the works of a fortification, &c. deſtroys the moſt ſubſtantial buildings by it's weight; and, burſting aſunder, creates the greateſt diſorder and miſchief by it's ſplinters.

The chambers of mortars are extremely different in their figures, and each of thoſe figures is defended by better or worſe arguments. Thus they are ſpherical, cylindrical, conical, bottled, or concave. In reality, nothing appears to be leſs determined upon true principles or experiments than the proportions of the ſeveral parts of a mortar *.

As the ſea-mortars, or thoſe which are fixed in the bomb-veſſels, are generally fixed at a much greater diſtance from the object than is ever required aſhore, they are made ſomewhat longer, and much heavier, than the land-mortars.

Plate VI. fig. 7. repreſents a ſea-mortar, the principal parts of which are, A, the chace; B, the reinforce; C, the breech; and D, the trunnions. The interior part, comprehended between the dotted lines, is called the bore, wherein the bomb is lodged; and the inner part of the bore, which is diminiſhed towards the breech, and contains the powder, is termed the chamber.

Mr. Muller, in his Treatiſe of Artillery, very juſtly obſerves, that the breech of our 13 inch ſea-mortars is loaded with an unneceſſary weight of metal. The chamber thereof contains 32 pounds of powder, and at the ſame time they are never charged with more than 12 or 15 pounds, by the moſt expert officers, becauſe the bomb-veſſel is unable to bear the violent ſhock of their full charge. Thus the action of the powder is diminiſhed by the vacancy left in the chamber, which is never above half filled. As a charge of 12 or 15 pounds of powder at moſt is therefore ſufficient, it is evidently proved, by the theory of powder, that this will produce the greateſt effect when diſcharged from a mortar with a cylindrical chamber, repreſented by fig. 8. He alſo proves, by a variety of experiments made by Captain Deſaguliers and himſelf, that the conical chamber, now uſed, is conſiderably inferior to the cylindrical one with the laſt charge of powder.

To facilitate the uſe of the mortar, it is placed in a ſolid carriage of tim-

* Muller's Artillery.

ber,

ber, called the bed, whoſe different parts are ſtrongly bolted together. By means of this it is firmly ſecured in it's ſituation, ſo that the exploſion of the powder may not alter it's direction. In the middle of the upper ſide of this carriage, plate VI. fig. 9. are two ſemi-circular notches, to receive the trunnions; over theſe are fixed two very ſtrong bands of iron, called the cap-ſquares, *a*, the middle of which is bent into a ſemi-circle, to embrace the trunnions, and keep them faſt in the mortar-bed. The cap-ſquares are confined to the timber-work by ſtrong pins of iron, called the eye-bolts, *b*, into whoſe upper ends are driven the keys, chained beneath them. On the fore-part of the bed a piece of timber is placed tranſverſely, upon which reſts the belly of the mortar, or that part which contains the chamber. The elevation of this piece, which is called the bed-bolſter, is repreſented by fig. 13. and the plan by fig. 12. it is uſed to elevate and ſupport the mortar whilſt firing.

Theſe beds are placed upon very ſtrong frames of timber, which are fixed in the bomb-ketch, and repreſented in fig. 5 and 10. plate VII. the former of which exhibits the tranſverſe ſection of a bomb-veſſel, with the mortar fixed in it's place, at an elevation of forty-five degrees. See RANGE. They are ſecurely attached to the frames, by means of a ſtrong bolt of iron, fig. 15. plate VI. called the pintle, paſſing perpendicularly through both, and afterwards through one of the beams of the veſſel. Thus the pintle, which paſſes through the hole in the center of the plan, fig. 10. ſerves as an axis to the bed; ſo that the mortar may be turned about horizontally as occaſion requires.

Plate VI. fig. 9. repreſents the elevation of the bed of a 10 inch ſea-mortar; fig. 10. is the plan, and 11. the front view thereof; fig. 12. exhibits the plan, and fig. 13. the elevation of the bed-bolſter.

We have already obſerved, that the ſhell is a great hollow ball, charged with powder. Fig. 16. is a perſpective view of it, and fig. 17. a ſection of it, whereby the thickneſs is exhibited. The parts *a* and *b* of the ſhell are it's handles, by which it is lifted up or removed; and *c* is the fuſe-hole, or aperture, through which the powder is poured in to charge it.

It appears, by fig. 17. that the lower part of the ſhell is thickeſt, by which it becomes heavier on that ſide, and accordingly falls thereon, and never on the fuſe. It is alſo the better enabled thereby to reſiſt the impreſſion of the powder, by which it is diſcharged from the mortar. Both of theſe reaſons, however, Mr. Muller conceives to be immaterial, becauſe nothing but an abſolute ſtoppage of the air can exhauſt the fuſes, as their compoſition enables them to burn in water, as well as air or earth; and the exploſion of the mortar would not, in his opinion, be able to break them, if they are equally thick every where. The moſt proper quantity of powder to charge a ſhell is probably two thirds of the weight which would fill the cavity.

The fuſe of it is repreſented by *c d*, fig. 17. This is generally a conical tube, formed of beech, willow, or ſome dry wood, and filled with a compoſition of ſulphur, ſalt-petre, and mealed-powder. The ſhell being

charged, this fuſe is inſerted in the cavity through the fuſe-hole; and, when fired, communicates the fire to the powder in the ſhell.

The fuſes are charged with great care, that nothing may prevent them from communicating the fire to the powder in the center of the bomb. They are driven into it ſo as that only about an inch and a half comes out beyond the fuſe hole; and then the ſhell is ſaid to be fixed.

Theſe fuſes are alſo charged long before there is occaſion to uſe them; and that the compoſition with which they are filled may not fall out, or be damaged by growing damp, the two ends are covered with a compoſition of tallow, mixed either with pitch or bees wax. When the fuſe is to be put into the ſhell, the little end is opened or cut off; but the great end is never opened till the mortar is to be fired*.

When the proper quantity of powder, neceſſary to charge the mortar, is put into the chamber, it is covered with a wad, well beat down with the rammer. After this the fixed ſhell is placed upon the wad, as near the middle of the mortar as poſſible, with the fuſe-hole uppermoſt, and another wad preſſed down cloſe upon it, ſo as to keep the ſhell firm in it's poſition. The officer than points the mortar, or gives it the inclination neceſſary to throw the ſhell to the place deſigned. When the mortar is thus fixed, the fuſe is opened; the priming-iron is alſo thruſt into the touch-hole of the mortar to clear it, after which it is primed with the fineſt powder. This done, two of the matroſſes, or ſailors, taking each one of the matches, the firſt lights the fuſe, and the other fires the mortar. The ſhell thrown out by the exploſion of the powder, is thrown to the place intended; and the fuſe, which ought to be exhauſted at the inſtant of the ſhell's falling, inflames the powder contained therein, and burſts it into ſplinters; which, flying off circularly, occaſion incredible miſchief whereſoever they reach.

Neceſſary orders before a bombardment by ſea.

When any fixed ſhells are iſſued from the tenders, the artillery people on board are immediately to fix others in their room, and are always to keep in their tenders the ſame number they had at firſt.

* Le Blond's Elements of War.

Extract of a letter from the commanding-officer of the artillery at Gibraltar, May 10, 1756.

" Happening to mention, before the governor and commodore Edgecumbe, that, in caſe " of Gibraltar being attacked by ſea, howitzers would be of great ſervice, as I did not " imagine any ſhip's ſide proof againſt a 10 inch ſhell, fired point-blank, or at a ſmall ele- " vation, with a full charge of powder; which being thought impoſſible by moſt preſent, " it was agreed to try the experiment: accordingly a target, of about 6 feet ſquare, of an " equal ſtrength and reſiſtance with the ſtrongeſt part of our largeſt men of war's ſides, " was made, and was juſt 3 feet thick of ſolid fir timber: we fired at it out of a ſea-ſervice " 10 inch howitzer, at 150 yards diſtance, and with 10 lb. of powder.

" The firſt ſhell juſt touched the top of the object, and lodged in the bank of ſand be- " hind it; the ſecond grazed ſhort three yards, and went through the lower corner of the " object; but the third ſhell gave full ſatisfaction, going through the very center of the " object, and entering 5 feet into a ſolid bank of ſand behind it."

The

The ſhells are to be fixed in the boat appointed to carry them, provided the weather permits; otherwiſe, in the ſafeſt place on deck, and to be *kited*, or lowered down into a ſpare rack, which muſt be in each boat for that purpoſe. While the ſhells are fixing, the powder-room is to be ſhut, the hatches laid and well ſecured againſt fire, and the place where they are fixed is to be well watered.

The ſhells being carefully examined in order that no ſpike is left therein, by which the fuſe may be ſplit, the fuſes are to be cut the full length, and to be ſet home into the ſhell very ſtrongly.

No ſhells, fixed during the ſervice, are to be kited; but if any ſhould be left, when the ſervice is over, they are immediately to be kited.

The powder in the bomb-veſſels is to be uſed firſt; and none to be opened or meaſured out, except in the captain's cabin, the door of which is to be kept ſhut during the whole time, and covered with tanned hides, to make it as ſecure as poſſible.

The fixed ſhells in the boats are to be likewiſe covered from fire or wet with hair-cloth and tanned hides with the utmoſt care.

If the ſervice is carried on at night, all the powder is to be ready meaſured out in cartridges, which may be kept in the powder-magazine and captain's cabin, in the empty powder-barrels and powder-bags; and all the ſhells requiſite are to be ready. The tin tubes, one powder-horn, and the port-fires, alſo the punches and bits for the vents, are to be kept in the captain's cabin.

No fire or light, except match and port-fires, to be on board either bomb-veſſel or tender during the ſervice.

The captain's cabin and the paſſage to it, alſo the way to the magazine and decks, are to be conſtantly watered.

The ſpunges for the mortars are to be all examined and tried, and if too large, they are to be cut ſo as to enter eaſily.

The vents of the mortars are to be examined, and the punches and tubes tried in them.

A laboratory-cheſt is to be on board each bomb-veſſel, in the captain's cabin, in which all the ſmall ſtores are to be kept.

Two tubs of water are to be on deck, for the lighteſt port-fires and match, which muſt be conſtantly held in them till ordered to fire.

Two careful men are alſo to be appointed for this ſervice, who are to do nothing elſe on any account.

Two careful men of the artillery are to be left on board each tender, for the filling and fixing of the ſhells.

Application muſt be made to the admiral for two men of war's boats to attend on each bomb-ketch and tender, for carrying ſhells and ſtores. One of theſe is to be loaded with fixed ſhells, which, when ſent to the bomb-veſſel, muſt remain with her until they are all taken out, which ſhould be only as they are wanted for loading the mortars; it is then to return to the tender. The other boat, mean while, will be receiving more fixed ſhells, and on the ſignal given from the bomb-ketch for more ſhells, muſt immediately repair to her with them.

A gang of warrant-officers, and eight ſeamen, are to be at each mortar, to give whatever aſſiſtance may be required.

A gang from the navy, with a careful warrant-officer, and a non-commiſſioned officer of the artillery, are to have the charge between decks on board each bomb-veſſel and tender, to get up the fixed ſhells that are in the rack; and a careful perſon is to remain conſtantly at the powder-room door, which muſt be kept ſhut as much as poſſible.

When any powder is wanted from the tender for loading the mortar, it ſhould be meaſured out in the tender, and the proper charge put into paper cartridges, upon which ſhould be written the quantity, and the mortar for which it is allotted.

If the ſervice of mortars ſhould render it neceſſary to uſe pound-ſhots, 200 of them, with a wooden bottom, are to be put into the 13 inch mortar, and a quantity of powder, not exceeding five pounds; and 100 of the above ſhot, with 2½ lb. of powder, for the 10 inch mortar, or 3 lb. at moſt.

One inch of fuſe burns 4 ſeconds and 48 parts.

Weight of the ſea-mortars and ſhells, as alſo of their full charges.

Nature of the mortar.	Powder contained in the chamber when full.			Weight of the mortar.			Weight of the ſhell when fixed.	Weight of powder contained in the ſhell.	
	lb.	oz.	pl.	Cwt.	qu.	lb.	lb.	lb.	oz.
10 inch howitzer	12	0	0	31	2	26	- - - - -	- - - - -	- -
13 inch mortar	30	0	0	81	2	1	198	7	0
10 inch mortar	12	0	0	34	2	11	93		

The howitzer, fig. 18. is a ſort of mortar, which is to be fixed horizontally like a cannon; and has, like the cannon, a wheel-carriage. Theſe pieces, however, are very rarely uſed in the ſea-ſervice.

For an account of the elevation of the mortar, and flight of ſhells according to the different charges of powder, the reader is referred to the article RANGE.

MOULD, (*devers*, Fr.) a thin flexible piece of timber, uſed by ſhipwrights, as a pattern whereby to form the different curves of the timbers, and other *compaſſing* pieces, in a ſhip's frame. There are two ſorts of theſe, namely, the bend-mould and hollow-mould: the former of theſe determines the convexity of the timbers, and the latter, their concavity on the outſide, where they approach the keel, particularly towards the extremities of the veſſel. The figure, given to the timbers by this pattern, is called their *bevelling*. See that article.

MOUNTED, (*monté*, Fr.) the ſtate of being armed or equipped with a certain number of cannon; expreſſed of a veſſel of war.

MOUSE, (*fuſée*, Fr.) a ſort of knob, uſually in the ſhape of a pear, wrought on the outſide of a rope, by means of ſpun-yarn, parceling, &c. as deſcribed in the article *puddening*. It is uſed to confine ſome other ſecurely to the former, and prevent it from ſliding along it's ſurface.

Theſe mouſes are particularly uſed on the ſtays of the lower-maſt, to prevent the *eye* from ſlipping up to the maſt; a circumſtance which would render it extremely difficult to remove the ſtay from the maſt-head, when neceſſary.

MOUSING *a hook*, the operation of faſtening a ſmall cord or line, acroſs the upper-part, from the point to the back thereof, in order to prevent it from unhooking by the motion of the veſſel, or otherwiſe.

MUSTERING, (*mouſteren*, Dutch) the act of calling over a liſt of the whole ſhip's company, or any particular detachment thereof, who are accordingly ſummoned to anſwer by their names on the occaſion.

N.

NAVAL, of or belonging to a ſhip, or to the royal navy. Hence we ſay, naval-ſtores, naval-officers, &c.

NAVE-LINE, a ſort of ſmall tackle, depending from the head of the main-maſt and fore-maſt, and faſtened to the middle of the *parrel* immediately behind the maſt, and communicating with the jears. It is uſed to keep the parrel directly oppoſite to the yard, and particularly whilſt hoiſting or lowering, as it would otherwiſe hang under the yard, and prevent it from being ſufficiently *braced*.

NAVIGATION, (*navigation*, Fr.) the art of directing the movements of a ſhip by the action of the wind upon the ſails. See the article SAILING.

Navigation is then applied, with equal propriety, to the arrangement of the ſails, according to the ſtate of the wind; and to the directing and meaſuring a ſhip's courſe by the laws of geometry; or it may comprehend both, being then conſidered as the theory and practice thereof.

Since every ſea-officer is preſumed to be furniſhed with books of navigation, in which that ſcience is copiouſly deſcribed, it would be ſuperfluous to enter into a particular detail of it in this place. As it would alſo be a fruitleſs taſk to thoſe who are entirely ignorant of the rules of trigonometry, and thoſe who are verſed in that ſcience generally underſtand the principles of navigation already, it appears not to come within the limits of our deſign. It ſuffices to ſay, that the courſe of a ſhip, and the diſtance ſhe has run thereon, are meaſured by the angles and ſides of a right-angled plain triangle, in which the hypothenuſe is converted into the diſtance; the perpendicular, into the difference of latitude; the baſe, into the departure from the meridian; the angle, formed by the perpendicular and hypothenuſe, into the courſe; and the oppoſite angle, contained between the hypothenuſe and baſe, into it's complement of the courſe.

The courſe of the ſhip is determined by the *compaſs*; and the *log-line*, or a ſolar obſervation, aſcertains the diſtance. Hence the hypothenuſe and angles are given, to find the baſe and perpendicular: a problem well known in trigonometry.

That part of navigation, which regards the piloting or conducting a ſhip along the ſea-coaſt, can only be acquired by a thorough knowledge of that particular coaſt, after repeated voyages. The moſt neceſſary articles thereof are already deſcribed in the article COASTING: it is ſufficient to obſerve, that the bearings and diſtances from various parts of the ſhore are generally aſcertained

tained in the night, either by *light-houſes*, or by the different depths of the water, and the various ſorts of ground at the bottom; as ſhells of different ſizes and colours, ſand, gravel, clay, ſtones, ooze, or ſhingle. In the day the ſhip's place is known by the appearance of the land, which is ſet by the compaſs, whilſt the diſtance is eſtimated by the maſter or pilot.

NAVY (from *navis*, Lat.) implies, in general, any fleet or aſſembly of ſhips. It is, however, more particularly underſtood of the fleet of veſſels of war, that belong to a kingdom or ſtate, to be employed either in aſſaulting and deſtroying it's enemies, or protecting it's commerce, and defending it's coaſts againſt hoſtilities or invaſion.

The navy of Great-Britain, together with it's civil and military departments, is governed by the lord high-admiral, or the lords commiſſioners for executing this office. It is divided into ſeveral claſſes, or orders, in proportion to the ſize of the ſhips, &c. See the article RATE.

If the only objects to be conſidered in the diſtribution of the navy, into different rates, were to improve ſhip-building, and facilitate the operations of the marine, it might appear expedient to multiply the rates, much beyond their preſent number, which would oblige the ſhipwrights to ſtudy the principles of their art with more diligence and application. But the ſimplicity of the ſervice in our dock-yards, and the views of œconomy, which ought never to be neglected when they regard important objects, has rendered it convenient to arrange the maſts, the yards, the ſails, the rigging, and artillery, into ſix rates; which, beſides that of ſloops of war, anſwers all the purpoſes of the navy. See DOCK-YARDS.

NAVY is alſo the collective body of officers employed in his majeſty's ſea-ſervice.

NEAPED, (from *nepflod*, Sax.) the ſituation of a ſhip which is left aground on the heighth of a ſpring-tide, ſo that ſhe cannot be floated off till the return of the next ſpring. See TIDE.

NEEDLE. See the article COMPASS.

NETTING, a ſort of fence, formed of an aſſemblage of ropes, faſtened acroſs each other, ſo as to leave uniform intervals between. Theſe are uſually ſtretched along the upper-part of a ſhip's quarter, and ſecured in this poſition by *rails* and *ſtanchions*. See QUARTER.

NIPPERS, (*garcettes de tournevire*, Fr.) certain pieces of flat braided cordage, uſed to faſten the cable to the *voyal* in a ſhip of war, when the former is drawn into the ſhip by mechanical powers applied to the latter.

Theſe nippers are uſually ſix or eight feet in length, according to the ſize of the cable; and five or ſix of them are commonly faſtened about the cable and voyal at once, in order to be heaved in by the capſtern. Thoſe which are furtheſt aft are always taken off, as the cable approaches the main hatchway; and others are at the ſame time faſtened on, in the fore-part of the ſhip, to ſupply their places. The perſons employed to bind the nippers about the cable and voyal, are called nipper-men: they are aſſiſted in this office by the boys of the ſhip, who always ſupply them with nippers,

and

and receive the ends of thoſe which are faſtened, to walk aft with them, and take them off at the proper place, in order to return them to the nipper-men.

NITTLES. See KNITTLES.

NO NEARER! *(arrive!* Fr.) the command given by the pilot or quarter-maſter, to the helmſman, to ſteer the ſhip no higher to the direction of the wind than the ſails will operate to advance the ſhip in her courſe. It is often abbreviated into *no near*, and ſometimes into *near*; and is generally applied when the ſails ſhake in the wind. See SHIVERING.

NO MAN'S LAND, *(St. Aubinet*, Fr.) a ſpace between the after-part of the belfrey and the fore-part of a ſhip's boat, when the ſaid boat is ſtowed upon the booms, as in a *deep-waiſted* veſſel. Theſe booms are laid from the forecaſtle nearly to the quarter-deck, where their after-ends are uſually ſuſtained by a frame called the gallows, which conſiſts of two ſtrong poſts, about ſix feet high, with a croſs piece, reaching from one to the other, *athwart-ſhips*, and ſerving to ſupport the ends of thoſe booms, maſts, and yards, which lie in reſerve to ſupply the place of others carried away, &c. The ſpace called *No man's land* is uſed to contain any blocks, ropes, tackles, &c. which may be neceſſary on the forecaſtle. It probably derives this name from it's ſituation, as being neither on the ſtarboard nor larboard ſide of the ſhip, nor on the *waiſt* or *forecaſtle*; but, being ſituated in the middle, partakes equally of all thoſe places.

NORMAN, a name given to a ſhort wooden bar, thruſt into one of the holes of the windlaſs in a merchant-ſhip, whereon to faſten the cable. It is only uſed when there is very little ſtrain on the cable, as in a commodious harbour, when the ſhip is well ſheltered from the wind and tide.

NUTS *of the anchor*, two little prominencies, appearing like ſhort ſquare bars of iron, fixed acroſs the upper part of the anchor-ſhank, to ſecure the ſtock thereof in it's place; for which purpoſe there is a corrreſponding notch, or channel, cut in the oppoſite parts of the ſtock, of the ſame dimenſions with the nuts. See the article ANCHOR.

O.

OAKHAM, or OAKUM, the ſubſtance into which old ropes are reduced, when they are untwiſted, looſened, and drawn aſunder. It is principally uſed to drive into the ſeams, or intervals, between the planks of a ſhip, to prevent the water from entering. See the article CAULKING.

White OAKUM, is that which is formed of untarred ropes.

OAR, (*rame*, Fr. *are*, Sax.) a long piece of timber, flat at one end, and round or ſquare at the other, and which being applied to the ſide of a floating-veſſel, ſerves to make it advance upon the water.

That part of the oar which is out of the veſſel, and which enters into the water, is called the blade, or waſh, *plat*; and that which is within-board, is termed the loom, whoſe extremity, *manche*, being ſmall enough to be graſped by the *rowers*, or perſons managing the oars, is called the handle.

To puſh the boat or veſſel forwards, by means of this inſtrument, the rowers turn their backs *forward*, and, dipping the blade of the oar in the water, pull the handle forward ſo that the blade at the ſame time may move *aft* in the water: But ſince the blade cannot be ſo moved, without ſtriking the water, this impulſion is the ſame, as if the water were to ſtrike the blade from the ſtern towards the head: the veſſel is therefore neceſſarily moved according to this direction. Hence it follows, that ſhe will advance with the greater rapidity, by as much as the oar ſtrikes the water more forcibly. Thus it is evident, that an oar acts upon the ſide of a boat or veſſel like a lever of the ſecond claſs, whoſe fulcrum is the ſtation, upon which the oar reſts on the boat's *gunnel*. In large veſſels, this ſtation is uſually called the *row-port*; but in lighters and boats it is always termed the *row-lock*.

To ſhip the OARS, (*armer les avirons*, Fr.) is to fix them in the row-locks ready for rowing.

OBSERVATION, the art of meaſuring the altitude of the ſun or a ſtar, in order to determine the latitude, or the ſun's azimuth, &c.

OFF, an expreſſion applied to the movement of a ſhip, when ſhe ſails out from the ſhore towards the diſtant ſea. When a ſhip is beating to windward, ſo that by one board ſhe approaches towards the ſhore, and by the other ſails out to ſea-ward, ſhe is ſaid to ſtand off and on ſhore, alternately. Hence,

OFFING, (*largue*, *dehors*, Fr.) implies out at ſea; or at a competent diſtance from the ſhore, and generally out of anchor-ground.

OFFWARD, the ſituation of a ſhip which lies aground, and leans off from the ſhore.

OKER, a ſort of red chalk uſed by ſhipwrights to mark timber, in hewing and forming it.

OLERON, a name given to a code of general rules relating to naval affairs, and formed by Richard I. when he was at the iſland of Oleron. Theſe have been frequently eſteemed the moſt excellent ſea laws in the world; and are ſtill preſerved in the black book of the admiralty.

OPEN, (*debouclé*, Fr.) the ſituation of a place which is expoſed to the wind and ſea, with little or no ſhelter for ſhipping to anchor therein.

OPEN, (*ouvert*, Fr.) is alſo expreſſed of any diſtant object, to which the ſight or paſſage is not intercepted by ſomething lying, or coming between. Thus, to be open with any place, is to be oppoſite to it; as the entry of a port, road, or haven.

OPENING, a paſſage, or ſtreight, between two adjacent coaſts or iſlands.

ORDINARY, (*gardiens*, Fr.) the eſtabliſhment of the perſons employed by the government to take charge of the ſhips of war, which are *laid-up* in the ſeveral harbours adjacent to the royal dock-yards. Theſe are principally compoſed of the warrant-officers of the ſaid ſhips, as the gunner, boatſwain, carpenter, deputy-purſer and cook, and their ſervants. There is beſides a crew of labourers enrolled in the liſt of the ordinary, who paſs from ſhip to ſhip occaſionally to pump, moor, remove, or clean them, whenever it is neceſſary.

The term *ordinary* is alſo applied, ſometimes, to the ſhips themſelves; it is likewiſe uſed to diſtinguiſh the inferior ſailors from the moſt expert and diligent. Thus the latter are rated *able* on the navy-books, and have 1*l.* 4*s.* per month; whereas thoſe who are rated *ordinary*, have only 19*s.* per month.

ORLOP, (*over-loop*, Dutch, *faux-pont*, Fr.) a platform of planks laid over the beams, in the hold of a ſhip of war, whereon the cables are uſually coiled, and the ſeveral officers ſtore-rooms contained.

OVER-BOARD, the ſtate of being thrown out of a ſhip or boat, into the water whereon ſhe ſwims: alſo the act of falling from ſuch a veſſel into the ſea, &c. as, the ſhip ſprung a leak, and obliged us to throw the guns over-board; a heavy ſea broke over the deck, and carried two of our men over-board.

OVER-CAST-STAFF, (*trebuchet*, Fr.) a ſcale, or meaſure, employed by ſhipwrights to determine the difference between the curves of thoſe *timbers* which are placed near the greateſt breadth, and thoſe which are ſituated near the extremities of the keel, where the floor riſes and grows narrower.

OVER-HAULING, (*parcourir*, Fr.) the act of opening and extending the ſeveral parts of a *tackle*, or other aſſemblage of ropes, communicating with blocks or *dead-eyes*. It is uſed to remove thoſe blocks to a ſufficient diſtance from each other, that they may be again placed in a ſtate of action, ſo as to produce the effect required. See the article TACKLE.

OVER-HAULING, is alſo vulgarly expreſſed of an examination or inſpection into the condition of a perſon or thing.

OVER-MASTED, the ſtate of a ſhip, whoſe maſts are too high, or too heavy, for the weight of her hull to counter-balance.

OVER-

OVER-SETTING, (*chavirer*, Fr.) the act of turning any thing upſide-down; alſo the movement of a ſhip when ſhe over-turns, *faire-capot*, ſo that the keel becomes above the water, and the maſts under the ſurface.

OUT, (*dehors*, Fr.) an expreſſion frequently uſed at ſea, implying the ſituation of the ſails when they are *ſet*, or extended, to aſſiſt the ſhip's courſe; as oppoſed to *in*; which is alſo applied, in the contrary ſenſe, to ſignify that ſuch ſails are furled.

OUT-FIT, is generally uſed to ſignify the expences of equipping a ſhip for a ſea-voyage; or of arming her for war, or both together. See FITTING-OUT.

OUT OF TRIM, (*endormi*, Fr.) the ſtate of a ſhip when ſhe is not properly balanced for the purpoſes of navigation; which is either occaſioned by the ſize, or poſition of her maſts and ſails; or by the comparative quantity, or arrangement of her cargo and ballaſt in the hold.

OUT-RIGGER, a ſtrong beam of timber, of which there are ſeveral fixed on the ſide of a ſhip, and projecting from it, in order to ſecure the maſts in the act of *careening*. See that article.

The outer ends of theſe beams are firmly laſhed to a bolt in the ſhip's ſide beneath, by which they are enabled to ſupport the maſt, by counteracting the ſtrain it ſuffers from the effort of the careening tackles; which being applied in the maſt-head draws it downwards, ſo as to act upon the veſſel with the power of a lever, whoſe fulcrum is in her center of gravity.

OUT-RIGGER is alſo a ſmall boom, occaſionally uſed in the *tops* to thruſt out the breaſt-back-ſtays to windward, in order to increaſe their tenſion, and thereby give additional ſecurity to the top-maſt.

This boom is uſually furniſhed with a tackle at it's inner-end, communicating with one of the top-maſt-ſhrouds; and has a notch on the outer end to contain the back-ſtay, and keep it ſteady therein. As ſoon as the back-ſtay is drawn tight, by means of it's tackle in the *chains*, the out-rigger is applied aloft, which forces it out to windward, beyond the circle of the top, ſo as to increaſe the angle which the maſt makes with the back-ſtay, and accordingly enable the latter the better to ſupport the former.

This machine is ſometimes applied without any tackle; it is then thruſt out to it's uſual diſtance beyond the top-rim, where it is ſecurely faſtened; after which the back-ſtay is placed in the notch, and extended below.

OWNER, the proprietor of a ſhip, by whom ſhe is freighted to the merchant for a ſea-voyage.

P.

PACKET, or PACKET-BOAT, *(paquet*, Fr.) a veſſel appointed by the government to carry the mail of letters, packets, and expreſſes from one kingdom to another by ſea, in the moſt expeditious manner. Thus the packet-boats, under the direction of the poſt-maſter-general of Great Britain, carry the mails from Dover to Calais, from Falmouth to Liſbon, from Harwich to Helvoetſluys, and from Parkgate to Dublin.

PADDLE, *(pagaie*, Fr. *pattal*, Welſh) a ſort of oar uſed by the ſavages of Africa and America to navigate their canoes. It is much ſhorter and broader in the blade than the oars of a boat, and is equally employed in rowing and ſteering. See the article CANOE.

PAINTER, *cableau*, Fr. (probably from *bindar*, Sax. to bind) a rope employed to faſten a boat either along-ſide of the ſhip to which ſhe belongs, or to ſome wharf, key, &c. as occaſion requires.

PALM, *(paumet*, Fr.) an implement uſed inſtead of a thimble in the exerciſe of making and mending ſails. It is formed of a piece of leather or canvas, on the middle of which is fixed a round plate of iron, of an inch in diameter, whoſe ſurface is pierced with a number of ſmall holes, to catch the head of the ſail-needle. The leather is formed ſo as to encircle the hand, and button on the back thereof, while the iron remains in the palm; ſo that the whole ſtrength of the hand may be exerted to thruſt the needle through the canvas, when it is ſtiff and difficult to be penetrated in ſewing.

PANCH, a ſort of thick and ſtrong mat, or texture, formed by interweaving twiſts of rope-yarn as cloſe as poſſible. It is chiefly uſed to faſten on the outſide of the yards, or rigging, to prevent their ſurfaces from being rubbed by the friction of ſome other contiguous object, particularly when the veſſel is rocked by a tempeſtuous ſea. See alſo MAT.

PARBUCKLE, a contrivance uſed by ſailors to *lower* a caſk or bale from any heighth, as the top of a wharf or key, into a boat or lighter, which lies along-ſide, being chiefly employed where there is no crane or tackle.

It is formed by faſtening the *bight* of a rope to a poſt, or ring, upon the wharf, and thence paſſing the two parts of the rope under the two quarters of the caſk, and bringing them back again over it; ſo that when the two lower parts remain firmly attached to the poſt, the two upper parts are gradually ſlackened together, and the barrel, or bale, ſuffered to roll eaſily downward to that place where it is received below. This method is alſo frequently uſed

uſed by maſons, in lifting up or letting down large ſtones, when they are employed in building; and from them it has probably been adopted by ſeamen.

PARCELING, certain long narrow ſlips of canvas, daubed with tar, and frequently bound about a rope, in the ſame manner as bandages are applied to a brôken limb in ſurgery.

This is chiefly practiſed when the ſaid rope is intended to be *ſerved*, at which time the parceling is laid in ſpiral turns, as ſmoothly upon the ſurface as poſſible, that the rope may not become uneven and full of ridges. It is alſo employed to raiſe the *mouſes*, which are formed on the *ſtays* and on the *voyal*, being firmly faſtened by *marling* it from one end to the other.

PARCELING *a ſeam*, is laying a ſhred of canvas upon it, and daubing it over with melted pitch, both above and below the canvas.

PARLIAMENT-HEEL, the ſituation of a ſhip, when ſhe is made to ſtoop a little to one ſide, ſo as to clean the upper part of her bottom on the other ſide, and cover it with a new compoſition; and afterwards to perform the ſame office on that part of the bottom which was firſt immerſed. The application of a new compoſition, or *coat* of ſtuff, on this occaſion, is called *boot-topping*. See that article.

PARREL, *(racage*, Fr. probably from *parallel)* a machine uſed to faſten the ſail-yards of a ſhip to the maſts, in ſuch a manner as that they may be eaſily hoiſted and lowered thereon, as occaſion requires.

There are four different ſorts of parrels, one of which is formed of a ſingle rope; another, of a rope communicating with an aſſemblage of *ribs* and trucks; a third, of a rope paſſing through ſeveral trucks, without any *ribs*; and the fourth, of a *truſs*, by which the yard may be at any time ſlackened from the maſt, or confined thereto as cloſe as poſſible.

The firſt of theſe, which is alſo the ſimpleſt, is formed of a piece of rope, well covered with leather, or ſpun-yarn, and furniſhed with an eye at each end. The middle of it being paſſed round the middle of the yard, both parts of it are faſtened together on the after-ſide of the yard, and the two ends, which are equally long, are paſſed round the after-part of the maſt; and one of them being brought under, and the other over the yard, the two eyes are laſhed together with a piece of ſpun-yarn on the fore-ſide thereof, whilſt another laſhing is employed to bind them together, behind the maſt, according to the manner deſcribed in the article MARLING.

The ſecond and moſt complicated is compoſed of ribs and trucks, the former of which are long flat pieces of wood, having two holes near their ends, *bigots*, as repreſented by fig. *a*. plate VIII. the latter, *pommes*, are ſmall globular pieces, *b*, with a hole through the middle, of the ſame ſize with thoſe of the ribs. Between every two ribs are placed two trucks, of which one is oppoſite to the upper hole, and the other to the lower holes of both ribs; ſo that the parrel-rope, *bâtard*, which paſſes through the whole, unites them together like a ſtring of beads.

In order to faſten this machine c more conveniently about the maſt and yard, ſo as to attach the latter to the former, the parrel-rope is formed of two pieces, each of which are furniſhed with an eye at one end, and both eyes lie on one ſide of the maſt; that is to ſay, one piece of the rope paſſes through the lower part of the parrel, and thence under the yard, whilſt the other comes through the upper part of the parrel and over the yard, till both eyes meet on the fore-ſide of the yard, where they are *joined* together. The other two ends of the parrel-rope are paſſed about the yard, and the hind part of the parrel alternately, till the latter is ſufficiently ſecured to the former. The whole proceſs is completed by *marling* the turns of the parrel-rope together, ſo as to confine them cloſe in the cavity, formed on the back of the ribs, as expreſſed in the figure.

The third is nothing more than a ſingle rope, with any number of trucks thereon, ſufficient to embrace the maſt. Theſe are calculated for the cheeks of a *gaff*. See that article.

The laſt, which are known by the name of truſs-parrels, are ſomewhat reſembling the firſt, only that inſtead of being faſtened by laſhings, the ropes, of which they are compoſed, communicate with tackles reaching to the deck, ſo that the parrel may be occaſionally ſlackened or ſtraitened, in order to let the yard move off from the maſt, or confine it thereto as ſtrictly as poſſible. The laſt of theſe are peculiar to the lower-yards, whereon they are extremely convenient. The ſecond are always uſed for the top-ſail-yards, and frequently for the lower-yards, in merchant-ſhips; and the firſt are ſeldom employed but for the top-gallant-yards.

PARSLING. See PARCELING.

PARTING, (*démarrer*, Fr.) the ſtate of being driven from the anchors; expreſſed of a ſhip, when ſhe has broke her cable by the violence of the wind, waves, or current, or all of them together.

PARTNERS, (*etambraies*, Fr.) certain pieces of plank nailed round the ſeveral *ſcuttles*, or holes, in a ſhip's deck, wherein are contained the maſts and capſterns. They are uſed to ſtrengthen the deck where it is weakened by thoſe breaches, but particularly to ſupport it when the maſt leans againſt it; as impreſſed by a weight of ſail, or when the capſtern bears forcibly upon it whilſt charged with a great effort.

PARTNERS is alſo a name given occaſionally to the ſcuttles themſelves, wherein the maſts and capſtern are fixed.

PASS, or PASSPORT, a permiſſion granted by any ſtate to navigate in ſome particular ſea, without hindrance or moleſtation from it. It contains the name of the veſſel, and that of the maſter, together with her tonnage, and the number of her crew, certifying that ſhe belongs to the ſubjects of a particular ſtate, and requiring all perſons, at peace with that ſtate, to ſuffer her to proceed on her voyage without interruption.

PASSAGE, (*traverſée*, Fr.) a voyage from one place to another by ſea; an outward or homeward-bound voyage.

PASSAGE-BOAT, (*barquette*, *barquerole*, Fr.) a ferry-boat, or one to carry paſſengers or luggage by water, from one port to another.

PASSAREE,

PASSAREE, a rope uſed to faſten the main-tack down to the ſhip's ſide, a little behind the *ches-tree*. This contrivance however is very rarely uſed, and never but in light breezes of wind.

PAUL, *(elinguet, epaule*, Fr.) a certain ſhort bar of wood, or iron, fixed cloſe to the *capſtern*, or *windlaſs* of a ſhip, to prevent thoſe engines from rolling back, or giving way, when they are employed to heave-in the cable, or otherwiſe charged with any great effort. See CAPSTERN and WINDLASS.

PAUNCH. See PANCH.

To PAY, *(eſpalmer*, Fr.) as a naval term, implies to daub or anoint the ſurface of any body, in order to preſerve it from the injuries of the water, weather, &c.

Thus the bottom of a ſhip is paid with a compoſition of tallow, ſulphur, reſin, &c. as deſcribed in the article BREAMING.

The ſides of a ſhip are uſually paid with tar, turpentine, or reſin; or by a compoſition of tar and oil, to which is ſometimes added red oker, &c. to protect the planks thereof from being ſplit by the ſun or wind. The lower-maſts are, for the ſame reaſons, paid with materials of the ſame ſort, if we except thoſe, along which their reſpective ſails are frequently hoiſted and lowered; ſuch are the maſts of *ſloops* and *ſchooners*, which are always paid with tallow for this purpoſe: for the ſame reaſon all top-maſts and top-gallant-maſts are alſo paid with hog's lard, butter, or tallow. See COAT and STUFF.

PAYING-OFF, *(abattée*, Fr.) the movement by which a ſhip's head falls to leeward of the point whither it was previouſly directed: particularly when, by neglect of the helmſman, ſhe had inclined to windward of her courſe, ſo as to make the head-ſails ſhiver in the wind, and retard her velocity. See alſo FALLING-OFF.

PAYING-OFF is likewiſe uſed to ſignify the payment of the ſhip's officers and crew, and the diſcharge of the ſhip from ſervice, in order to be laid-up at the moorings.

PAYING-OUT, or PAYING-AWAY, the act of ſlackening a cable, or other rope, ſo as to let it run out of the veſſel for ſome particular purpoſe.

PEAK, or PEEK, a name given to the upper-corner of all thoſe ſails which are extended by a *gaff*, or by a yard which croſſes the maſt obliquely, as the mizen-yard of a ſhip, the main-yard of a *bilander*, &c. The upper extremity of thoſe yards and gaffs are alſo denominated the peak. Hence

PEEK-HALIARDS, are the ropes, or tackles, by which the outer end of a gaff is hoiſted, as oppoſed to the *throat*-haliards, which are applied to the inner end. See HALIARDS.

PEN, *(buckot*, Fr.) a place encloſed by hurdles, for fiſhing on the ſea-coaſt.

PENDENT, *(flamme*, Fr.) a ſort of long narrow banner, diſplayed from the maſt-head of a ſhip of war, and uſually terminating in two ends or points, as expreſſed by *a*, fig. 4. plate V. There are, beſides others, pendents, *cornets*, of a larger kind, uſed to diſtinguiſh the chief of a ſquadron of ſhips. See the article COMMODORE.

PENDENT, *(pantoire*, Fr.) is alſo a ſhort piece of rope, fixed under the ſhrouds, upon the head of the main-maſt and fore-maſt, from which it de-

pends as low as the *cat-harpins*, having an eye in the lower end, which is armed with an iron *thimble*, to prevent the eye from being fretted by the hooks of the main and fore-tackles, &c.

There are, beſides, many other pendents of the latter kind, which are generally ſingle or double ropes, to whoſe lower extremities is attached a block, or tackle: ſuch are the fiſh-pendent, the yard-tackle-pendents, the reef-tackle-pendents, &c. all of which are employed to tranſmit the effort of their reſpective tackles to ſome diſtant object.

PERIAGUA, a ſort of large canoe, uſed in the Leeward iſlands, South America, and the gulf of Mexico. It differs from the common veſſels of that name, as being compoſed of the trunks of two trees, hollowed and united into one fabric; whereas thoſe which are properly called canoes, are formed of the body of one tree. See CANOE.

PIER, a ſtrong mound, or fence, projecting into the ſea, to break off the violence of the waves from the entrance of a harbour.

PILLAGE, (*butin*, Fr.) the plunder of a prize taken from an enemy.

PILLOW, (*couſſin*, Fr.) a block of timber, whereon the inner-end of the bowſprit is ſupported. See BOWSPRIT.

PILOT, the officer who ſuperintends the navigation, either upon the ſea-coaſt or on the main ocean. It is, however, more particularly applied by our mariners to the perſon charged with the direction of a ſhip's courſe, on, or near the ſea-coaſt, and into the roads, bays, rivers, havens, &c. within his reſpective diſtrict*.

* The regulations, with regard to pilots in the royal navy, are as follow: The commanders of the king's ſhips, in order to give all reaſonable encouragement to ſo uſeful a body of men as pilots, and to remove all their objections to his majeſty's ſervice, are ſtrictly charged to treat them with good uſage, and an equal reſpect with warrant-officers.

"The purſer of the ſhip is always to have a ſet of bedding provided on board for the pilots, and the captain is to order the boatſwain to ſupply them with hammocs, and a convenient place to lie in, near their duty, and apart from the common men; which bedding and hammocs are to be returned when the pilots leave the ſhip.

"A pilot, when conducting one of his majeſty's ſhips in pilot-water, ſhall have the ſole charge and command of the ſhip, and may give orders for ſteering; ſetting, trimming, or furling the ſails; tacking the ſhip; or whatever concerns the navigation: and the captain is to take care that all the officers and crew obey his orders. But the captain is diligently to obſerve the conduct of the pilot, and if he judges him to behave ſo ill as to bring the ſhip into danger, he may remove him from the command and charge of the ſhip, and take ſuch methods for her preſervation as ſhall be judged neceſſary; remarking upon the log-book the exact hour and time when the pilot was removed from his office, and the reaſons aſſigned for it.

"Captains of the king's ſhips, employing pilots in foreign parts of his majeſty's dominions, ſhall, after performance of the ſervice, give a certificate thereof to the pilot, which being produced to the proper naval-officer, he ſhall cauſe the ſame to be immediately paid; but if there be no naval-officer there, the captain of his majeſty's ſhip ſhall pay him, and ſend the proper vouchers, with his bill, to the navy-board, in order to be paid as bills of exchange.

"Captains of his majeſty's ſhips, employing foreign pilots, to carry the ſhips they command into, or out of foreign ports, ſhall pay them the rates due by the eſtabliſhment or cuſtom of the country, before they diſcharge them; whoſe receipts being duly vouched, and ſent with a certificate of the ſervice performed, to the navy-board, they ſhall cauſe them to be paid with the ſame exactneſs as they do bills of exchange." *Regulations and Inſtructions of the Sea-ſervice, &c.*

PIN *of a block.* See Block.

PINK, (*pinque*, Fr.) a name given to a ſhip with a very narrow ſtern; whence all veſſels, however ſmall, whoſe ſterns are faſhioned in this manner, are called *pink-ſterned.*

PINNACE, a ſmall veſſel, navigated with oars and ſails, and having generally two maſts, which are rigged like thoſe of a ſchooner.

Pinnace is alſo a boat, uſually rowed with eight oars. See the article Boat.

PINTLES, certain pins or hooks, faſtened upon the back part of the rudder, with their points downwards, in order to enter into, and reſt upon the *googings*, fixed on the ſtern-poſt to hang the rudder. See Helm.

PIRATE, (*pirate*, Fr. πειρατης, Gr.) a ſea-robber, or an armed ſhip that roams the ſeas without any legal commiſſion, and ſeizes or plunders every veſſel ſhe meets indiſcriminately, whether friends or enemies.

The colours uſually diſplayed by pirates are ſaid to be a black field, with a death's head, a battle-axe and hour-glaſs. The laſt inſtrument is generally ſuppoſed to determine the time allowed to the priſoners, whom they take, to conſider whether they will join the pirates in their felonious combination, or be put to death, which is often perpetrated in the moſt cruel manner.

Amongſt the moſt celebrated pirates of the north is recorded *Alvilda*, daughter of a king of the Goths, named *Sypardus*. She embraced this occupation to deliver herſelf from the violence impoſed on her inclination, by a marriage with *Alf*, ſon of *Sigarus*, king of Denmark. She dreſt herſelf as a man, and compoſed her band of rowers, and the reſt of her crew, of a number of young women, attired in the ſame manner. Amongſt the firſt of her cruizes ſhe touched at a place where a company of pirates bewailed the death of their captain. The ſtrangers were captivated with the agreeable manners of Alvilda, and choſe her for their chief. By this reinforcement ſhe became ſo formidable upon the ſea, that prince Alf came to engage her. She ſuſtained his attacks for a conſiderable time; but, in a vigorous action, Alf boarded her veſſel, and having killed the greateſt part of her crew, ſeized the captain, namely herſelf; whom nevertheleſs he knew not, becauſe the princeſs had a caſque which covered her viſage. Being maſter of her perſon, he removed the caſque, and in ſpite of her diſguiſe, inſtantly recognized her, and offered her his hand in wedlock †.

PITCH, (*brai*, Fr. *pix*, Lat.) a compoſition, black, dry, brittle, and ſhining, which remains at the bottom of an alembic after the oil of turpentine is drawn off by diſtillation. It is uſed in caulking a ſhip, to fill the chinks, or intervals between the planks of her ſides, or decks, or bottom. It is ſometimes mixed with reſin, or other glutinous material. See Tar.

To Pitch *the ſeams.* See the article Pay.

PITCHING, (*tangage*, Fr. *appicciare*, Ital.) may be defined, the vertical vibration which the length of a ſhip makes about her center of gravity; or the movement, by which ſhe plunges her *head* and *after-part* alternately into the hollow of the ſea.

† Hiſt. Denmark, by Saxo Grammaticus.

This

This motion may proceed from two cauſes: the waves, which agitate the veſſel; and the wind upon the ſails, which makes her ſtoop to every blaſt thereof. The firſt abſolutely depends upon the agitation of the ſea, and is not ſuſceptible of inquiry; and the ſecond is occaſioned by the inclination of the maſts, and may be ſubmitted to certain eſtabliſhed maxims*.

When the wind acts upon the ſails the maſt yields to it's effort, with an inclination which increaſes in proportion to the length of the maſt to the augmentation of the wind, and to the comparative weight and diſtribution of the ſhip's lading.

The repulſion of the water, to the effort of gravity, oppoſes itſelf to this inclination, or at leaſt ſuſtains it, by as much as the repulſion exceeds the momentum, or abſolute effort of the maſt, upon which the wind operates. At the end of each blaſt, when the wind ſuſpends it's action, this repulſion lifts the veſſel; and theſe ſucceſſive inclinations and repulſions produce the movement of *pitching*, which is very inconvenient; and when it is conſiderable will greatly retard the courſe, as well as endanger the maſt, and ſtrain the veſſel.

PLANE, a term uſed by ſhipwrights, implying the area, or imaginary ſurface, contained within any particular outlines. Thus the plane of elevation, plate I. exhibits a ſurface limited by the head before, by the ſtern abaft, by the keel below, and by the upper part of the veſſel's ſide above. Thus the horizontal plane, in the ſame plate, is comprehended within the lines which deſcribe the ſhip's greateſt breadth and length; and thus alſo the plane of projection, repreſented likewiſe in plate I. circumſcribes the greateſt heighth and breadth of the ſame veſſel.

PLANKING, *(border*, Fr.) the act of covering and lining the ſides of a ſhip with an aſſemblage of oak planks, which completes the proceſs of ſhip-building, and is ſometimes called *laying on the ſkin*, by the artificers. See the article BUILDING.

The breadth and thickneſs of all the planks of a 74 gun ſhip, as alſo of her *wales* and *thick-ſtuff*, are exhibited in the midſhip ſection, plate VII.

PLAT, *(garcette de cable*, Fr.) a ſort of braided cordage, formed of ſeveral *ſtrands* of old rope-yarn, twiſted into *foxes*. It is uſed to wind about that part of the cable which lies in the *hawſe-hole*, or againſt the fore-part of the ſhip, where it would otherwiſe be greatly injured by the continual friction, produced by the agitation of the ſhip in ſtormy weather. See the articles FRESHEN and SERVICE.

PLUG, *(palardeux*, Fr. *plug*, Swed.) certain pieces of timber, formed like the fruſtum of a cone, and uſed to ſtop the hawſe-holes, and the breaches made in the body of a ſhip by cannon-balls; the former of which are called hawſe-plugs, and the latter, ſhot-plugs, which are formed of various ſizes in proportion to the holes made by the different ſizes of ſhot, which may penetrate the ſhip's ſides or bottom in battle; accordingly they are always ready for this purpoſe. See ENGAGEMENT.

* Saverien, Dict. Marine.

PLUNDER,

PLUNDER, *(butin*, Fr.) a name given to the effects of the officers or crew of a prize, which are pillaged by the captors.

PLYING, the act of making, or endeavouring to make, a progress againſt the direction of the wind. Hence a ſhip, that advances well in her courſe in this manner of ſailing, is ſaid to be a good plyer, *boulinier*. See the articles BEATING and TACKING.

POINT, a low angle, or arm of the ſhore, which projects into the ſea, or into a river, beyond the reſt of the beech.

POINTING, the operation of tapering the end of a rope, and weaving a ſort of mat, or cloſe texture, about the diminiſhed part of it, ſo as to thruſt it more eaſily through any hole, and prevent it from being readily untwiſted. Thus the end of a *reef-line* is pointed ſo, that, being ſtiffer, it may more readily penetrate the eye-let holes of the *reef*; and the ends of the ſtrands of a cable are occaſionally pointed, for the greater conveniency of *ſplicing* it to another cable, eſpecially when this taſk is frequently performed. The extremities of the ſplice of a cable are alſo pointed, that it may paſs with more facility through the hawſe-holes.

POINTS, *(garcettes de ris*, Fr.) ſhort flat pieces of braided cordage, tapering from the middle towards each end, and uſed to reef the courſes and top-ſails of a ſhip. See the article REEF.

POLACRE, a ſhip with three maſts, uſually navigated in the Levant, and other parts of the Mediterranean. Theſe veſſels are generally furniſhed with ſquare ſails upon the main-maſt, and *lateen* ſails upon the fore-maſt and mizen-maſt. Some of them however carry ſquare ſails upon all the three maſts, particularly thoſe of Provence in France. Each of their maſts is commonly formed of one piece, ſo that they have neither top-maſt nor top-gallant-maſt; neither have they any *horſes* to their yards, becauſe the men ſtand upon the top-ſail-yard to looſe or furl the top-gallant-ſail, and on the lower-yard to *reef*, looſe, or furl the top-ſail, whoſe yard is lowered ſufficiently down for that purpoſe. See alſo XEBEC.

POLE-AXE, a ſort of hatchet nearly reſembling a battle-axe, having an handle about 15 inches in length, and being furniſhed with a ſharp point, or claw, bending downwards from the back of it's head; the blade whereof is formed like that of any other hatchet. It is principally employed to cut away and deſtroy the rigging of any adverſary who endeavours to board.

Pole-axes are alſo ſaid to have been ſucceſsfully uſed on ſome occaſions in boarding an enemy, whoſe ſides were above thoſe of the boarder. This is executed by detaching ſeveral gangs to enter at different parts of the ſhip's length, at which time the pole-axes are forcibly driven into her ſide, one above another, ſo as to form a ſort of ſcaling-ladders.

POLE-MAST. See the article MAST.

Under bare POLES, *(etre à ſec*, Fr.) the ſituation of a ſhip at ſea when all her ſails are furled, particularly in a tempeſt. See the articles SCUDDING and TRYING.

POMIGLION, a name given by ſeamen to the caſcabel, or hindmoſt knob of a cannon. See that article.

PONTOON, (*ponton*, Fr.) a low flat veſſel, nearly reſembling a lighter, or barge of burthen, and furniſhed with cranes, *capſterns*, tackles, and other machin ry neceſſary for careening ſhips of all ſizes. Theſe are very common in the principal parts of the Mediterranean, but are rarely uſed in the northern parts of Europe.

POOP, (*dunette*, Fr. *puppis*, Lat.) the higheſt and aftmoſt deck of a ſhip. See the article DECK.

POOP-ROYAL, (*dunette ſur dunette*, Fr.) a ſhort deck, or platform, placed over the aftmoſt part of the poop in the largeſt of the French and Spaniſh men of war, and ſerving as a cabin for their maſters and pilots. This is uſually called the top-gallant-poop by our ſhipwrights.

POOPING, the ſhock of a high and heavy ſea, upon the ſtern or quarter of a ſhip, when ſhe *ſcuds* before the wind in a tempeſt. This circumſtance is extremely dangerous to the veſſel, which is thereby expoſed to the riſk of having her whole ſtern beat inwards, by which ſhe would be immediately laid open to the entrance of the ſea, and of courſe founder or be torn to pieces.

PORT, a harbour or haven on the ſea-coaſt. See the article HARBOUR.

PORT is alſo a name given, on ſome occaſions, to the larboard, or left-ſide of the ſhip, as in the following inſtances:

The ſhip heels to PORT, *i. e.* ſtoops or inclines to the larboard ſide.

Top the yard to PORT! the order to make the larboard extremity of a yard higher than the other. See TOPPING.

PORT *the helm!* the order to put the helm over to the larboard-ſide of the veſſel.

In all theſe ſenſes this phraſe appears intended to prevent any miſtakes happening from the ſimilarity of ſounds in the words ſtarboard and larboard, particularly when they relate to the helm, where a miſapprehenſion might be attended with very dangerous conſequences.

PORTS, (*ſabords*, Fr.) the embraſures or openings in the ſide of a ſhip of war, wherein the artillery is ranged in battery upon the decks above and below.

The ports are formed of a ſufficient extent to point and fire the cannon, without injuring the ſhip's ſide by the recoil; and as it ſerves no end to enlarge them beyond what is neceſſary for that purpoſe, the ſhipwrights have eſtabliſhed certain dimenſions, by which they are cut in proportion to the ſize of the cannon.

The ports are ſhut in at ſea by a ſort of hanging-doors, called the *port-lids*, *mantelets*; which are faſtened by hinges to their upper-edges, ſo as to let down when the cannon are drawn into the ſhip. By this means the water is prevented from entering the lower-decks in a turbulent ſea. The lower and upper edges of the ports are always parallel to the deck, ſo that the guns, when levelled in their carriages, are all equally high above the lower extremity of the ports which is called the port-cells. The ports are exhibited, throughout the ſhip's whole length, by H. in the ELEVATION, plate I. They are alſo repreſented upon a larger ſcale in plate IV. fig. 10. and plate VIII. fig. 3. The gun-room-ports, in the ſhip's counter, are expreſſed by H. fig. 1. plate X. See alſo the articles DECK and CANNON.

POWDER,

POWDER-CHESTS, certain ſmall boxes, charged with powder and a quantity of old nails, or ſplinters of iron, and faſtened occaſionally on the decks and ſides of a ſhip, in order to be diſcharged on an enemy who attempts to ſeize her by boarding. See that article.

Theſe caſes are uſually from 12 to 18 inches in length, and about 8 or 10 in breadth, having their outer or upper-part terminating in an edge. They are nailed to ſeveral places of the *quarter*, the quarter-deck and bulk-head of the waiſt, having a train of powder which communicates with the inner apartments of the ſhip, ſo as to be fired at pleaſure to annoy the enemy. They are particularly uſed in merchant-ſhips, which are furniſhed with cloſe-quarters to oppoſe the boarders. See CLOSE-QUARTERS.

PRAM, or PRAME, a ſort of lighter, uſed in Holland and the ports of the Baltic ſea, to carry the cargo of a merchant-ſhip *along-ſide*, in order to lade her: or to bring it aſhore to be lodged in the ſtore-houſes after being diſcharged out of the veſſel.

PRATIC, (*pratique*, Fr.) a term uſed in the European ports of the Mediterranean ſea, implying free intercourſe or communication with the natives of the country, after a limited quarantine has been performed, in conſequence of a voyage to Barbary or Turky.

PREVENTER, an additional rope, employed at times to ſupport any other, when the latter ſuffers an unuſual ſtrain, particularly in a ſtrong gale of wind; as the

PREVENTER-BRACE, a temporary brace, fixed occaſionally to ſuccour the main or fore-yard of a ſhip, but particularly the latter, when it is charged with a greater effort than uſual, and which, it is apprehended, the common ſtanding braces would not be able to ſupport. See BRACE.

PREVENTER-SHROUDS, and PREVENTER-STAYS, are applied, in the ſame manner, to ſerve the ſame purpoſes; and may be eaſily underſtood by referring to the articles SHROUD and STAY.

PRICKING *the chart*, (*pointer*, Fr.) the act of tracing a ſhip's courſe upon a marine chart, by the help of a ſcale and compaſſes, ſo as to diſcover her preſent ſituation.

PRICKING *the ſails*, the act of ſtitching two cloths of a ſail together along the ſpace comprehended between the two edges, or ſelvages, that overlay each other. Or, it is the ſowing a middle-ſeam between the two ſeams which are employed to unite every cloth of a ſail to the next adjoining. This operation is rarely performed till the ſails have been worn for a conſiderable time, ſo that the twine, with which they were originally ſewed, is become very feeble and incapable of reſiſting the efforts of a ſtrong gale of wind.

PRIMING, the train of powder which is laid from the opening of the touch-hole along the cavity of the pan, in order to fire the piece: alſo the operation of laying this train. See the articles CANNON and EXERCISE.

PRIMING-WIRE, or PRIMING-IRON, a ſort of iron-needle, employed to penetrate the touch-hole of a cannon, when it is loaded, in or-

der to diſcover whether the powder contained therein is thoroughly dry, and fit for immediate ſervice.

PRIVATEER, a veſſel of war, armed and equipped by particular merchants, and furniſhed with a military commiſſion by the admiralty, or the officers who ſuperintend the marine department of a country, to cruiſe againſt the enemy, and take, ſink, or burn their ſhipping, or otherwiſe annoy them as opportunity offers. Theſe veſſels are generally governed on the ſame plan with his majeſty's ſhips, although they are guilty of many ſcandalous depredations, which are very rarely practiſed by the latter.

PRIZE, a veſſel taken from the enemy by a ſhip of war, privateer, or armed merchantman *.

PRIZING, the application of a lever to move any weighty body, as a cask, anchor, cannon, &c.

PROP, (*accord*, Fr.) See SHORE.

PROTEST, an inſtrument, drawn up in writing, and atteſted before a juſtice of peace, by the maſter and a part of the ſhip's crew after the expiration of a voyage, deſcribing the ſeverity of the ſaid voyage, occaſioned by tempeſtuous weather, heavy ſeas, an inſufficient crew, or any other circumſtances by which the ſhip has ſuffered, or may ſuffer, either in her hull, maſts, rigging, or cargo. It is chiefly intended to ſhew, that ſuch damages or misfortunes did not happen through any neglect or ill conduct of the maſter or his officers.

PROW, (*proue*, Fr. *pros*. Lat.) a name given by ſeamen to the beak, or pointed cut-water of a polacre, xebeck, or galley. The upper-part of the prow, in thoſe veſſels, is uſually furniſhed with a grating-platform for the convenience of the ſeamen who walk out to perform whatever is neceſſary about the ſails or rigging in the bowſprit.

PUDENING, (*bourrelet*, Fr.) a thick wreath, or circle of cordage, tapering from the middle towards the ends, and faſtened about the main-maſt and fore-maſt of a ſhip, to prevent their yards from falling down, when the ropes by which they are uſually ſuſpended are ſhot away in battle.

The pudening, which is repreſented by fig. 1. plate VIII. is generally formed in the following manner: A ſmall piece of rope, whoſe length is twice the diameter of the maſt, is ſpliced together at the two ends, and being thus doubled and extended, a *thimble* is ſeized into each of the ex-

* The regulations with regard to prizes in the royal navy are as follow:

"I. When any ſhip or veſſel is taken from the enemy, the hatches are to be immediately ſpiked up, and her lading and furniture ſecured from embezzlement, till ſentence is paſſed upon her in ſome court of admiralty, empowered to take cognizance of cauſes of that nature.

"II. The captain is to cauſe the officers of the prize to be examined; three or more of the company, who can give beſt evidence, to be brought to the ſaid court of admiralty, together with the charter-parties, bills of lading, and other ſhip's papers found on board.

"V. When a privateer is taken, great care is to be had to ſecure all the ſhip's papers, eſpecially the commiſſion; but if there be no legal commiſſion found on board, then all the priſoners are to be carried before ſome magiſtrate, in order to their being examined and committed as pirates."

N. B. The third and fourth articles relate to the finding any of the king's ſubjects in the prizes; and appear unneceſſary in this place.

tremities.

tremities. After this a large quantity of parceling is firmly wound about it's ſurface in ſuch a manner as to make it gradually larger from the two ends towards the middle. It is afterwards, once or twice, *ſerved* with ſpun-yarn throughout it's whole length, to bind the parceling more cloſely, and render it firmer and more compact; and the whole is completed by *pointing* it on the ſurface. Being then fitted with a laniard at one of the eyes, it is fixed about the maſt by paſſing the laniard alternately through both eyes or thimbles on the fore-ſide of the maſt. See alſo DOLPHIN.

PULLING, a name given by ſailors to the act of rowing with the oars.

PUMP, a well-known machine, uſed to diſcharge the water from the ſhip's bottom into the ſea.

The common pump is ſo generally underſtood, that it hardly requires any deſcription. It is a long wooden tube, whoſe lower end reſts upon the ſhip's bottom, between the timbers, in an apartment called the *well*, incloſed for this purpoſe near the middle of the ſhip's length.

This pump is managed by means of the brake, and the two boxes, or piſtons. Near the middle of the tube, in the chamber of the pump, is fixed the lower-box, which is furniſhed with a ſtaple, by which it may at any time be hooked and drawn up, in order to examine it. To the upper-box is fixed a long bar of iron, called the ſpear, whoſe upper-end is faſtened to the end of the brake, by means of an iron bolt paſſing through both. At a ſmall diſtance from this bolt the brake is confined by another bolt between two cheeks, or ears, fixed perpendicularly on the top of the pump. Thus the brake acts upon the ſpear as a lever, whoſe fulcrum is the bolt between the two cheeks, and diſcharges the water by means of the valves, or clappers, fixed on the upper and lower boxes.

Theſe ſorts of pumps, however, are very rarely uſed in ſhips of war, unleſs of the ſmalleſt ſize. The moſt uſeful machine of this kind, in large ſhips, is the chain-pump, which is univerſally uſed in the navy. This is no other than a long chain, equipped with a ſufficient number of valves, at proper diſtances, which paſſes downward through a wooden tube, and returns upward in the ſame manner on the other ſide. It is managed by a *roller* or *winch*, whereon ſeveral men may be employed at once; and thus it diſcharges, in a limited time, a much greater quantity of water than the common pump, and that with leſs fatigue and inconvenience to the labourers.

This machine is nevertheleſs expoſed to ſeveral diſagreeable accidents by the nature of it's conſtruction. The chain is of too complicated a fabric, and the ſproket-wheels, employed to wind it up from the ſhip's bottom, are deficient in a very material circumſtance, *viz.* ſome contrivance to prevent the chain from ſliding or jerking back upon the ſurface of the wheel, which frequently happens when the valves are charged with a conſiderable weight of water, or when the pump is violently worked. The links are evidently too ſhort, and the immechanical manner, in which they are connected, expoſes them to a great friction in paſſing round the wheels. Hence they are ſometimes apt to break or burſt aſunder in very dangerous ſituations, when it is extremely difficult or impracticable to repair the chain.

The

The conſideration of the known inconveniences of the above machine has given riſe to the invention of ſeveral others which ſhould better anſwer the purpoſe. They have been offered to the public one after another with pompous recommendations by their reſpective projectors, who have never failed to report their effects as conſiderably ſuperior to that of the chain-pump with which they have been tried. It is however much to be lamented, that in theſe ſort of trials there is not always a ſcrupulous attention to what may be called mechanical juſtice. The artiſt, who wiſhes to introduce a new piece of mechaniſm, has generally ſufficient addreſs to compare it's effects with one of the former machines which is crazy or out of repair. A report of this kind indeed ſavours ſtrongly of the evidence of a falſe witneſs, but this fineſſe is not always diſcovered. The perſons appointed to ſuperintend the comparative effects of the different pumps, have not always a competent knowledge of hydraulics to detect theſe artifices, or to remark with preciſion the defects and advantages of thoſe machines as oppoſed to each other. Thus the ſeveral inventions propoſed to ſupplant the chain-pump have hitherto proved ineffectual, and are now no longer remembered.

Of late, however, ſome conſiderable improvements have been made on the naval chain-pump, by Mr. Cole, under the direction of Capt. Bentinck. The chain of this machine is more ſimple and mechanical, and much leſs expoſed to damage. It is exactly ſimilar to that of the fire engine, and appears to have been firſt applied to the pump by Mr. Mylne, to exhauſt the water from the caiſſons at Black-friars bridge. It has thence been transferred to the marine by Capt. Bentinck, after having received ſome material additions to anſwer that ſervice. The principal ſuperiority of this pump to the former is, 1. That the chain is more ſimple and more eaſily worked, and of courſe leſs expoſed to injuries by friction. 2. That the chain is ſecured upon the wheel, and thereby prevented from jerking back when charged with a column of water. 3. That it may be eaſily taken up and repaired when broken, or choaked with ballaſt, &c. 4. That it diſcharges a much greater quantity of water with an inferior number of men.

As we wiſh to pay all poſſible attention in this work to every improvement in the marine, we have exhibited in plate VIII. a ſection of this machine at large, as fixed in a frigate of war, fig. 2. wherein A is the keel, and V the floor-timbers, and X the kelſon, a a a the ſeveral links of the chain, b b the valves, C the upper wheels, D the lower wheels, c c the cavities upon the ſurface of the wheels to receive the valves as they paſs round thereon, *d d* the bolts fixed acroſs the ſurface of the wheels, to fall in the interval between every two links, to prevent the chain from ſliding back.

The links of the chain, which are no other than two long plates of iron with a hole at each end, and fixed together by two bolts ſerving as axles, are repreſented on a larger ſcale as *a a*. The valves are two circular plates of iron with a piece of leather between them: theſe are alſo exhibited at large by *b b*.

Upon a trial of this machine with the old chain-pump aboard the Seaford frigate, it appears, in a report ſigned by rear-admiral Sir John Moore, 12 captains, and 11 lieutenants of his majeſty's navy, that it's effects, when compared with the latter, were as follow.

New Pump.				Old Pump.		
Number of Men.	Tuns of Water.	Seconds of Time.		Number of Men.	Tuns of Water.	Seconds of Time.
4	1	43½		7	1	76
2	1	55		4	1	81

The ſubſcribers further certify, that the chain of the new pump was dropped into the well, and afterwards taken up and repaired and ſet at work again in two minutes and a half; and that they have ſeen the lower wheel of the ſaid pump taken up to ſhow how readily it might be cleared and refitted for action, after being choaked with ſand or gravel; which they are of opinion may be performed in four or five minutes.

PUMP-*ſpear*, (*barre de pompe*, Fr.)

PUNT, a ſort of flat-bottomed boat, whoſe floor reſembles the platform of a floating-ſtage. It is uſed by the naval artificers, either in *caulking*, *breaming*, or repairing the bottom of a ſhip.

PURCHASE, a name given by ſailors to any ſort of mechanical power employed in raiſing or removing heavy bodies, or in fixing or extending the ſhip's rigging. Such are the tackles, windlaſſes, capſterns, ſcrews, and handſpikes.

PURSER, an officer appointed by the lords of the admiralty, to take charge of the proviſions of a ſhip of war, and to ſee that they are carefully diſtributed to the officers and crew, according to the inſtructions which he has received from the commiſſioners of the navy for that purpoſe.

Q.

QUADRANT, an inſtrument uſed to take the altitude of the ſun or ſtars at ſea, in order to determine the latitude of the place; or the ſun's azimuth, ſo as to aſcertain the magnetical variation.

Theſe inſtruments are variouſly conſtructed, and by conſequence the apparatus of each kind is ſomewhat different from thoſe of the others, according to the improvements they have at different times received from ſeveral ingenious artiſts.

As all the different kinds of quadrants are circumſtantially deſcribed, either in printed directions to uſe them, or in other books, a particular account of them here might reaſonably be eſteemed ſuperfluous. It ſuffices to ſay that the moſt uſeful, as well as the moſt general, for taking obſervations at ſea is the octant, originally invented by Sir Iſaac Newton, and ſince that time improved and brought into practice by Meſſ. Godfrey and Hadley. It may not however be unneceſſary to remark, that the back-obſervation, which, in many ſituations, is certainly more accurate and uſeful than that which is taken in front, is almoſt totally neglected by our obſervers, under pretence of it's being more uncertain, or more liable to error: but really becauſe it is ſomewhat more difficult to learn. We may venture to affirm however, that no artiſt, who thoroughly underſtands the operation, will ever advance ſo abſurd an objection, unleſs we ſhould doubt the teſtimony of a multitude of experiments.

QUARANTINE, the ſtate of the perſons who are reſtrained within the limits of a ſhip, or lazaretto; or otherwiſe prevented from having a free communication with the inhabitants of any country, till the expiration of an appointed time, during which they are repeatedly examined with regard to their health. It is chiefly intended to prevent the importation of the plague, from the countries under the dominion of the Turks.

QUARTER *of a ſhip*, (*hanche*, Fr.) that part of a ſhip's ſide which lies towards the ſtern; or which is comprehended between the aftmoſt end of the main *chains* and the ſides of the ſtern, where it is terminated by the quarter-pieces.

Although the lines by which the quarter and bow of a ſhip, with reſpect to her length, are only imaginary, yet experience appears ſufficiently to have aſcertained their limits: ſo that if we were to divide the ſhip's ſides into five equal portions, the names of each ſpace would be readily enough expreſſed. Thus the firſt, from the ſtern, would be the quarter; the ſecond,

abaft the midſhips; the third, the midſhips; the fourth, before the midſhips; and the fifth, the bow. Whether theſe diviſions, which in reality are ſomewhat arbitrary, are altogether improper, may be readily diſcovered by referring to the mutual ſituation or approach of two adjacent veſſels. The enemy boarded us on the larboard-ſide! Whereabouts? Abaft the midſhips, before the midſhips, &c.

Plate VIII. fig. 3. repreſents a geometrical elevation of the quarter of a 74 gun ſhip, as correſponding with the other figures of a ſhip of the ſame rate, delineated upon the ſame plate. See the articles HEAD, MIDSHIP-FRAME, and STERN.

In this figure, all the parts are diſtinguiſhed by the ſame letters as thoſe in the plane of elevation, plate I. wherein the quarter is continued into the ſide, upon a ſmaller ſcale.

Explanation of fig. 3. plate VIII.

A the keel, with *a* the falſe keel beneath it.
B the ſtern-poſt.
D D the quarter-gallery, with it's balluſtrades and windows.
E F the quarter-pieces, which limit and form the outlines of the ſtern.
F the taffarel, or upper pieces of the ſtern.
F G the profile of the ſtern, with it's galleries.
H the gun-ports of the lower-deck.
b the gun-ports of the upper and quarter-deck.
I the after-part of the mizen-channel.
K the wing-tranſom.
K G the lower counter.
L B the ſtation of the deck-tranſom.
L Q the after-part of the main-wale.
D R the after-part of the channel-wale, parallel to the main-wale.
S U the ſheer-rail, parallel to both wales.
T *t* the rudder.
A *t* F the rake of the ſtern.
P *i i* the drift-rails.
T u the after-part of the load *water-line*.
k k l the curve of the ſeveral decks correſponding to thoſe repreſented in the head.

As the marks, by which veſſels of different conſtructions are diſtinguiſhed from each other, are generally more conſpicuous on the ſtern, or quarter, than any other part, we have repreſented, in plate VIII. ſome of the quarters, which aſſume the moſt different ſhapes, and form the greateſt contraſt with each other.

Fig. 4. ſhews the ſtern and quarter of a Dutch flight.
Fig. 5. the ſtern and quarter of a cat.
Fig. 8. is the ſtern and quarter of a common galley.
Fig. 9. exhibits the quarter of a firſt-rate galley, otherwiſe called a galleaſſe.

Fig. 6. the quarter of a Dutch dogger, or galliot.

Fig. 7. repreſents the ſtern and quarter of a ſloop of war.

The quarters of all other ſhips have a near affinity to thoſe above exhibited. Thus all ſhips of the line, and Eaſt-Indiamen, are formed with a quarter little differing from the principal figure in this plate. Xebecs have quarters nearly reſembling thoſe of galeaſſes, only ſomewhat higher. Hagboats and pinks approach the figure of *cats*, the former being a little broader in the ſtern, and the latter a little narrower; and the ſterns and quarters of cats ſeem to be derived from thoſe of fly-boats. The ſterns of Dutch doggers and galliots are indeed ſingular, and like thoſe of no other modern veſſel: they have nevertheleſs a great reſemblance to the ſhips of the ancient Grecians, as repreſented in medals and other monuments of antiquity.

On the QUARTER, may be defined an arch of the horizon, contained between the line prolonged from the ſhip's ſtern and any diſtant object, as land, ſhips, &c. Thus if the ſhip's keel lies on an eaſt and weſt line, the ſtern being weſtward, any diſtant object perceived in the north-weſt or ſouth-weſt, is ſaid to be on the larboard or ſtarboard quarter. See the article BEARING.

QUARTER-BILL, a roll, or liſt, containing the different ſtations, to which all the officers and crew of the ſhip are quartered, in the time of battle, and the names of all the perſons appointed to thoſe ſtations.

QUARTER-CLOTHS, (*baſtingage*, Fr.) long pieces of painted canvas, extended on the outſide of the quarter-netting from the upper part of the gallery to the *gangway*. They are generally decorated with martial inſtruments, or allegorical figures.

QUARTER-GALLERY, a ſort of ſmall balcony, with or without balluſtrades, on the quarter of a ſhip, as repreſented by fig. 1. plate VIII. The gallery on the quarter generally communicates with that on the ſtern, by means of a door paſſing from one to the other.

QUARTER-GUNNER, an inferior officer under the direction of the gunner of a ſhip of war, whom he is to aſſiſt in every branch of his duty; as keeping the guns and their carriages in proper order, and duly furniſhed with whatever is neceſſary; filling the powder into cartridges; ſcaling the guns, and keeping them always in a condition for ſervice. The number of quarter-gunners in any ſhip is always in proportion to the number of her artillery, one quarter-gunner being allowed to every four cannon.

QUARTER-MASTER, an inferior officer appointed by the maſter of a ſhip of war to aſſiſt the *mates* in their ſeveral duties; as ſtowing the ballaſt and proviſions in the hold, *coiling* the cables on their platforms, overlooking the ſteerage of the ſhip, and keeping the time by the watch-glaſſes.

QUARTER-NETTING, a ſort of net-work, extended along the rails on the upper-part of a ſhip's quarter. In a ſhip of war theſe are always double, being ſupported by iron cranes, placed at proper diſtances. The interval is ſometimes filled with cork, or old ſails, but chiefly with the hammocs of the ſailors, ſo as to form a parapet to prevent the execution of the enemy's ſmall arms in battle. See the article ENGAGEMENT.

QUARTER-

QUARTER-RAILS, are narrow-moulded planks, generally of fir, reaching from the top of the ſtern to the gangway. They are ſupported by ſtanchions, and ſerve as a fence to the quarter-deck, to prevent the men from tumbling into the ſea by the rolling of the ſhip, particularly in ſmall veſſels.

QUARTERING-WIND. See the article SAILING.

QUARTERS, a name given, at ſea, to the ſeveral ſtations where the officers and crew of a ſhip of war are poſted in action. See the article ENGAGEMENT.

The number of men appointed to manage the artillery is always in proportion to the nature of the guns, and the number and condition of the ſhip's crew. They are, in general, as follow, when the ſhip is well manned, ſo as to fight both ſides at once occaſionally:

Nature of the gun. Pounder.	No. of men.	Nature of the gun. Pounder.	No. of men.
To a 42	15	To a 9	6
32	13	6	5
24	11	4	4
18	9	3	3
12	7		

This number, to which is often added a boy to bring powder to every gun, may be occaſionally reduced, and the guns nevertheleſs well managed. The number of men appointed to the ſmall arms, on board his majeſty's ſhips and ſloops of war, by order of the admiralty, are,

Rate of the ſhip.	No. of men to the ſmall arms.
1ſt	150
2d	120
3d of 80 guns	100
— of 70 guns	80
4th of 60 guns	70
4th of 50 guns	60
5th	50
6th	40
Sloops of war	30

The lieutenants are uſually ſtationed to command the different batteries, and direct their efforts againſt the enemy. The maſter ſuperintends the movements of the ſhip, and whatever relates to the ſails. The boatſwain, and a ſufficient number of men, is ſtationed to repair the damaged rigging; and the gunner and carpenter, wherever neceſſary, according to their reſpective offices. See alſo the articles CANNON and EXERCISE.

The marines are generally quartered on the poop and forecaſtle, or gangway, under the direction of their officers; although, on ſome occaſions, they aſſiſt at the great guns, particularly in diſtant connonading.

QUARTERS! is alſo an exclamation to implore mercy from a victorious enemy.

QUICK-SAND, a looſe quaking ſand, into which a ſhip ſinks by her own weight, as ſoon as the water retreats from her bottom.

QUICK-WORK, *(œuvres-vives*, Fr.) a general name given to all that part of a ſhip which is under the ſurface of the water when ſhe is laden fit for a ſea-voyage. It is alſo applied, occaſionally, to that part of the ſide which is above the ſheer-rail, and which is uſually painted with trophies, &c. on the outſide.

QUILTING, *(kulcht*, Dutch) the operation of weaving a ſort of coat, or texture, formed of the *ſtrands* of rope, about the outſide of any veſſel, to contain water, &c. as a jar, caſk, bottle, &c.

QUOIN, a ſort of wedge, employed to raiſe the cannon to a proper level, that it may be more truly directed to the object.

QUOINS are alſo employed to wedge off the caſks of wine, oil, ſpirituous liquors, &c. from each other, that their bilges may not rub againſt each other ſo as to occaſion a leak, by the agitation of the ſhip, at ſea.

R.

R.

RABBET, *(rablure, rabattre,* Fr.) a deep groove, or channel, cut in a piece of timber longitudinally, to receive the edge of a plank, or the ends of a number of planks, which are to be ſecurely faſtened therein. The depth of this channel is equal to the thickneſs of the plank, ſo that when the end of the latter is let into the rabbet, it will be level with the outſide of the piece. Thus the ends of the lower planks of a ſhip's bottom terminate upon the ſtem afore, and the ſtern-poſt abaft, with whoſe ſides their ſurfaces are even. The ſurface of the garboard ſtreak, whoſe edge is let into the keel, is, in the ſame manner, level with the ſide of the keel at the extremities of the veſſel.

RACK, *(raſteau,* Fr.) a frame of timber, containing ſeveral *ſheaves*, and uſually fixed on the oppoſite ſides of a ſhip's bowſprit, to direct the ſailors to the reſpective ropes paſſing through it; all of which are attached to the ſails on the bowſprit.

RACKING, the faſtening two oppoſite parts of a tackle together, ſo as that any weighty body ſuſpended thereby ſhall not fall down, although the rope, which forms the tackle, ſhould be looſened by accident or neglect.

This expedient is chiefly practiſed when the boats are hung up to the ſhip's ſide, during the night time, in an open road or bay, leſt the rope of the tackle ſhould be untied by the inattention of ſome of the crew; by which accident the boat might be conſiderably damaged, and probably loſt, or daſhed in pieces.

RAFT, *(radeau,* Fr.) a ſort of float, formed by an aſſemblage of various planks, or pieces of timber, faſtened together ſide by ſide, ſo as to be conveyed more commodiouſly, to any ſhort diſtance in a harbour or road, than if they were ſeparate. The timber and plank, with which merchant-ſhips are laden, in the different parts of the Baltic ſea, are attached together in this manner, in order to float them off to the ſhipping.

RAFT-PORT, a ſquare hole, cut through the buttocks of ſome ſhips, immediately under the counter, to receive the planks or pieces of timber which are brought to lade her for tranſportation; and which, on account of their great length, could not be received aboard otherwiſe.

RAG-BOLT, an iron pin, having ſeveral barbs, as explained in the article IRON-WORK, and repreſented in fig. 2. plate II.

RAILS, are narrow planks, generally of fir, upon which there is a moulding ſtuck. They are for ornament, and are nailed acroſs the ſtern, above the wing tranſom and counters, &c. They are likewiſe nailed upon ſeveral planks along the ſide; one in particular is called the ſheer-rail, which limits the height of the ſide from the forecaſtle to the quarter-deck, and runs aft to the ſtern, and forward to the cat-head; the wales are nearly parallel to this. *Murray's Ship-Building.*

The reader will underſtand this article better by referring to the figures of the rails, as repreſented in plates I, IV, VII, and VIII. and their explanations, in NAVAL ARCHITECTURE, &c.

RAILS *of the head*, certain curved pieces of timber, extending from the bows on each ſide to the continuation of the ſhip's ſtem, to ſupport the *knee of the head*, and the ornamental figure fixed thereon. The former of theſe rails is repreſented at large in the figure referred to from the article HEAD, plate IV.

To RAISE, to elevate any diſtant object at ſea, by a gradual approach towards it from the place whence it was formerly obſerved. This effect is known to be occaſioned by the convexity of the ſurface of the ſea, which previouſly intercepted the view, when directed towards the lower parts of the ſaid object. This term is oppoſed to LAYING, which ſee.

RAISING *a purchaſe*, the act of diſpoſing certain inſtruments, or machines, in ſuch a manner, as that, by their mutual effects, they may produce a mechanical force ſufficient to overcome the weight or reſiſtance of the object to which this machinery is applied.

RAKE, the projection of the upper parts of a ſhip at the heighth of the ſtem, (*claucement*, Fr.) and ſtern, (*quette*, Fr.) beyond the extremities of the keel. Thus if a plummet be hung from the top of a ſhip's ſtern, ſo as to be level with the continuation of the keel, the diſtance between the after end of the keel and the plummet will be the length of the rake abaft, or the rake of the ſtern.

RAKING *a ſhip*, the act of cannonading a ſhip on the ſtern, or head, ſo as that the balls ſhall ſcour the whole length of her decks; which is one of the moſt dangerous incidents that can happen in a naval action. This is frequently called raking fore and aft, being the ſame with what is called *enfilading* by engineers.

RANGE, a ſufficient length of the cable, drawn up on the deck, before the anchor is caſt looſe from the bow, to let it ſink to the bottom, without being interrupted, that the flukes may be forced the deeper into the ground, by the additional weight which the anchor acquires in ſinking. For this reaſon the range, which is drawn up out of the tier, ought to be equal in length, to the depth of the water where the ſhip anchors. See ANCHOR and CABLE-TIER.

RANGE, is alſo the diſtance to which a ſhell or cannon-ball is thrown from a piece of artillery, by the exploſion of gun-powder. See the articles CANNON and MORTAR.

The flight of a ſhot is diſtinguiſhed, by artillery people, into two different ranges, of which the firſt is called the point-blank; and the ſecond, the random-ſhot. To theſe alſo may be added the *ricochet*, or rolling and bounding-ſhot.

Whatever has been obſerved, in other parts of this work, with regard to the flight of a ſhot from a piece of artillery, is on the preſumption that it deſcribes a right line in it's paſſage to the object. This, however, is not ſtrictly true; becauſe by it's weight it inclines to the earth every inſtant of it's motion: but as it's velocity is very great when firſt diſcharged from the cannon, the weight does not ſenſibly affect the direction in the firſt inſtant

of it's motion. Thus the line it deſcribes, as repreſented in plate III. extending from fig. 16. to the ſhip under ſail, is apparently ſtraight, and the extent of this line is called the *point-blank* range of the piece; which accordingly may be defined the extent of the apparent right line, deſcribed by a ball diſcharged from a cannon.

This range is much leſs than the greateſt range, or *random-ſhot*; but the piece cannot be levelled, or, as it is generally expreſſed, *pointed* at an object intended to be battered, if that object is not within the diſtance of the point-blank range; for beyond that, the ſtroke is very uncertain.

A piece is ſaid to fire at random-ſhot, when the breech reſts upon the bed of the carriage, ſo that the ball is carried to the greateſt poſſible diſtance. But as, in this method of firing, the ball cannot be directed to any determinate object, it is rarely uſed in the ſea-ſervice, and only when the ſhot cannot fail of doing great execution in the place whereon it falls.

Beſides the two ranges above deſcribed, there is the *ricochet**, invented by the Marſhal de Vauban.

To fire a piece by way of the ricochet, the cannon is only charged with a quantity of powder ſufficient to carry the ſhot along the face of the works attacked. The ſhot, thus diſcharged, goes rolling and bounding, killing, maiming, or deſtroying all it meets in it's courſe, and creates much more diſorder by going thus ſlowly, than if thrown from the piece with greater violence.

When ricochet-firing is uſed, the pieces are elevated from 3 to 6 degrees, and no more; becauſe if the elevation is greater, the ſhot will only drop into the work, without bounding from one place to another. They are to be loaded with a ſmall charge, and directed in ſuch a manner as juſt to go over the parapet†.

It was the opinion of engineers formerly, that by charging the pieces high, the ball was thrown to a greater diſtance. Hence the pieces were charged with two-thirds, or even the whole weight of the ſhot, in order to impel it with greater velocity; but it has been diſcovered ſince, that the half, or one third of the weight of the ball, is the fitteſt charge for the piece‡.

If the whole quantity of powder, employed to charge the cannon, could take fire at the ſame inſtant, it is apparent that the velocity, communicated to the ſhot, would increaſe in proportion to the additional quantity of powder. But though the time of it's inflammation is very ſhort, it may yet be conceived as divided into many inſtants. In the firſt inſtant, the powder begins to dilate and impel the ſhot forward; and if it has force enough to expel it from the piece before the whole charge is inflamed, that part which is left to take fire afterwards will produce no effect at all on the ſhot. A charge of extraordinary force does not therefore accelerate the velocity of the bullet: and hence it follows that the piece ought to be

* *Ricochet* ſignifies *duck* and *drake*, a name given to the bounding of a flat ſtone thrown almoſt horizontally into the water.

† Muller's Artillery.

‡ Le Blond's Elements of War.

charged

charged with no more powder, than will take fire whilſt the ball is paſſing through the chace of the cannon.

It may not be amiſs to obſerve here, that the range of cannon is greater in the morning and at night, than at noon; and in cold, than in hot weather. The reaſon is, that at theſe times the air being leſs heated, gives leſs way to the dilatation of the powder, which being by this means confined, as it were, to a ſmaller ſphere of action, muſt have a ſtronger effect in proportion*.

" When the lengths of cannon are proportional to the heighth of the charge, the ſhot will be diſcharged with the ſame velocity, whatever the calibre may be; and ſince the ratios of the velocities of ſhots, iſſuing from pieces of different lengths, loaded with different charges of powder, will be of great uſe in the conſtruction of cannon, we have collected them in the following table, where the numbers at the top expreſs the length of the pieces by the diameter of their ſhots. That is, the firſt is 12 diameters; the ſecond 15, and ſo on. The firſt perpendicular column expreſſes the charges, in reſpect to the weight of the ſhots: thus, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$, imply that the weight of the charge is $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$ of the weight of the ſhot. The other numbers, in the ſame horizontal lines, expreſs the diſtance in feet moved over by the velocities of the ſhot, uniformly continued in a ſecond of time.

A Table of Velocities.

	12	15	18	21	24	27	30	36
$\frac{1}{4}$	1043	1052	1058	1063	1066	1068	1071	1074
$\frac{1}{3}$	1186	1200	1210	1217	1222	1224	1229	1234
$\frac{1}{2}$	1406	1434	1452	1465	1475	1482	1488	1497
$\frac{2}{3}$	1568	1613	1641	1662	1677	1688	1698	1711

" We made uſe of the diameter of a 9 pound ſhot, which being 4 inches, is more convenient in the calculation; and this diameter expreſſes the heighth of the charge when it is a quarter of the weight of the ſhot, and the reſt in proportion.

" Several remarks may be made upon this table, which are of great importance in the conſtruction of cannon. Firſt, when the charge is but a quarter of the ſhot's weight, the difference between the velocities, when the length is 12 and 15 diameters, is but 9 feet in a ſecond; and the differences between the other velocities decreaſe as the length increaſes.

" Hence, as the difference between the velocities when the piece is 15 and 36 diameters long, is but 22 feet in a ſecond, it is eaſily perceived, that when the pieces are charged with one quarter of the ſhot's weight, the length from 12 to 15 diameters is the beſt.

" Secondly, When the charge is one-third of the ſhot's weight, the difference of the velocities, when the piece is 12, 15, and 18 diameters long, are 14, 10 ſeconds; and from thence decreaſe more and more, as the length of the piece increaſes: ſo the length, from 15 to 18 diameters, ſeems to be the beſt, every thing being conſidered.

* Belidor. Bigot de Morogues.

" Thirdly,

" Thirdly, and laſtly, it appears, from the ſame manner of reaſoning, that when the charge is one-half of the ſhot's weight, the length ought to be from 18 to 21 diameters; and when the charge is two-thirds of the ſhot's weight, the length ought to be from 21 to 24 diameters." *Muller's Artillery.*

As one of the effects of the ſhell reſults from it's weight, the range of mortars is extremely different from that of cannon, becauſe the former is not pointed at a certain object, like the latter, but inclined to the horizon at a certain angle; ſo that the ſhell, being thrown up obliquely, much in the ſame direction as a tennis-ball ſtruck by the racket, may fall upon the place intended. Hence it appears that the mortar has no point-blank range, or at leaſt that no uſe is made of it.

The mortar, being fixed in a ſituation obliquely with the horizon, ſo as that the line *a c*, which paſſes through the middle of it longitudinally, being continued, would make an angle *b a d* with the horizon *a b*; a ſhell, diſcharged in the direction of this continued line, would deviate from it every inſtant of it's motion by it's weight, which inclines it downwards, and by this means it would deſcribe a curve-line, as *a e b*, called a *parabola**.

The line *a b*, fig. 19. plate VI. is called the extent of the range, or the amplitude of the parabola; and the line *a d*, the elevation of the mortar.

To make a ſhell fall on a given place, two things are to be conſidered; viz. the elevation of the mortar; and the quantity of powder uſed to charge it; both of which may be aſcertained as follows: A ſhell diſcharged from a mortar, pointed vertically, will deſcribe a line nearly perpendicular to the horizon: I ſay nearly, becauſe the mortar will always have ſome little motion, which will deſtroy the exact perpendicularity of the ſhell's flight; but abſtracted from this, a ſhell, diſcharged vertically, would fall again into the mortar †.

If the mortar be afterwards inclined more and more towards the horizon, the ſhell will fall ſtill further and further diſtant from the mortar, till the elevation reſts at 45°; and the more the mortar is pointed under this angle, the more will the range of the ſhell be diminiſhed: all of which is ſtrictly demonſtrated by geometry. But the following is a very ſimple manner of conceiving it, without having recourſe to that ſcience.

A ſhell, diſcharged in the direction of a line, nearly perpendicular to the horizon, will fall at a little diſtance from the bomb-veſſel. This requires no proof. A ſhell, thrown according to a line that makes a very acute angle with the horizon, will preſently come to the ground by it's weight, and by

* Weight, or gravity, always operates equally on a falling body; for as it always ſubſiſts in an equal degree, it muſt perpetually act with equal force, or produce always the ſame effect in the ſame time. So if, in the firſt inſtant of falling, it communicates to a body a certain force ſufficient to move a certain ſpace, it muſt, in every following inſtant, communicate a force capable of moving it the like ſpace, and by this means the velocity of a falling body is every moment accelerated; for if it has one degree the firſt inſtant, it will have two the ſecond, three the third, and ſo on. Hence it muſt move different ſpaces every inſtant, and by that means deſcribe the curve-line above mentioned.

† Le Blond's Elements of War.

conſequence will not, any more than the other, fall at a conſiderable diſtance from the mortar.

Hence it is eaſy to conceive, that in order to fall at the greateſt diſtance from the mortar, the ſhell muſt be fired according to an elevation at the greateſt poſſible diſtance, as well from a vertical, as from an horizontal line. This elevation divides in two equal parts the angle formed by the vertical and horizontal lines, which being of 90 degrees, or what is called a right angle, a ſhell will be thrown to the greateſt diſtance, in the direction of a line making an angle of 45 degrees. For above this angle the range will diminiſh, becauſe the ſhell approaches the vertical line; and under the ſame elevation it will alſo decreaſe, becauſe the flight of the ſhell approaches the horizontal line.

Hence alſo it appears that there are two angles, according to which a mortar may be inclined to make the ſhell fall on the ſame place; theſe are the angles, equally diſtant from the line, which cuts the quadrant into two equal parts: ſo that if, for example, a mortar is elevated at 30°, the ſhell will fall at the ſame diſtance as if it had been elevated at 60°, each of theſe angles being 15° diſtant on this, and that ſide of the quadrant; that is, from the angle of 45 degrees.

The ſecond thing to be conſidered, is, to know the exact charge of powder neceſſary to throw a ſhell to a given diſtance.

If the ſhell, being fired at an elevation of 45°, falls ſhort of the place intended, the charge of powder muſt be increaſed. If it reaches the place, or goes beyond it, it is evident that the charge is ſufficient. If the ſhell, at an elevation under 45°, falls ſhort of the place intended, with a given charge, the mortar muſt be more elevated: if, on the contrary, it falls too far off, it muſt be more inclined to the horizon: and by theſe eſſays the proper degree of inclination may be eaſily and ſpeedily diſcovered.

If the mortar then is raiſed above 45°, it muſt be more inclined, ſo as to make a more acute angle with the horizon, to increaſe the range of the ſhell; and, on the contrary, raiſed nearer a perpendicular, to diminiſh it: all of which are conſequences drawn from what has been ſaid on this ſubject.

It muſt be obſerved, firſt, that the greateſt diſtance to which a ſhell can be thrown, with the ſtrongeſt charge, is little more than about 1800 or 2000 fathoms.

Secondly, that though a mortar may be elevated indifferently, either ſo much above or below 45° as to carry a ſhell to a given diſtance, yet when any building is to be deſtroyed, it ſhould be raiſed above 45°, becauſe the ſhell, riſing to a greater height when fired according to a greater angle, falls with greater force, and by conſequence will do more damage to the place on which it is thrown. But when the buſineſs is to fire on a body of men, the mortar muſt be pointed below 45°, that the ſhell may not have force enough to enter far into the ground, and that the ſplinters in the exploſion may do more execution.

Practice for Sea-Mortars.

Nature of the Mortar. 13 Inch. Powder lb. oz.	10 Inch. Powder lb. oz.	Flight in Seconds.	Ranges in Yards.	Length of Compoſition in Fuſes. Inches Parts
3— 0	———	12	612	2—64
4— 0	1—12	14	832	3— 8
———	2— 4	15	958	3—30
5— 0	2— 6	16	1088	3— 52
5— 8	2— 8	17	1299	3—74
———	3— 2	18	1377	3—96
7— 0	3— 8	19	1534	4—18
———	4— 0	20	1710	4—40
8—12	4— 8	21	1874	4—62
9— 0	5— 8	22	2057	4—84
12 0	———	23	2248	———
14——	———	24	2448	———
16——	———	25	2656	———
18——	8— 2	26	2873	5—72
20— 0	8—10	27	3098	5—94
22— 0	9— 8	28	3332	6—16
24— 8	11— 4	29	3574	6—38
28— 0	12— 0	30	3821	6—60
31— 8	———	31	4085	6—82

The ranges of mortars, at the ſeveral elevations below, are in proportion to one another, viz.

45—40—35—30—25—20—15—10— 5
100—98—94—86—76—64—50—34—17

Example. Knowing the range of a ſhell at 45 to be 890 yards, required the range at 30 with the ſame powder; ſay, as 100 : 86 : : 890 : 765. 4; and if you have a ſhell's range at 30, and would know how far it will go at 45 with the ſame quantity of powder, rule as 86 : 100 : : 765. 4 : 890.

N. B. Theſe propoſitions only hold good when the powder is equal.

RATES, the orders or claſſes into which the ſhips of war are divided, according to their force and magnitude.

It has already been obſerved, in the article Navy, that this regulation, which limits the rates of men of war to the ſmalleſt number poſſible, ſeems to have been dictated by conſiderations of political œconomy, or of that of the ſimplicity of the ſervice in the royal *dock-yards*. The Britiſh fleet is accordingly diſtributed into ſix rates, excluſive of the inferior veſſels that uſually attend on naval armaments; as ſloops of war, armed ſhips, bomb-ketches, fire-ſhips and cutters, or ſchooners commanded by lieutenants.

Ships of the firſt rate mount 100 cannon, having 42 pounders on the lower deck, 24 pounders on the middle deck, 12 pounders on the upper

deck, and 6 pounders on the quarter-deck and forecaſtle. They are manned with 850 men, including their officers, ſeamen, marines and ſervants.

In general, the ſhips of every rate, beſides the captain, have the maſter, the boatſwain, the gunner, the chaplain, the purſer, the ſurgeon, and the carpenter; all of whom, except the chaplain, have their mates or aſſiſtants, in which are comprehended the ſail-maker, the maſter at arms, the armorer, the captain's clerk, the gunſmith, &c.

The number of other officers are always in proportion to the rate of the ſhip. Thus a firſt rate has ſix lieutenants, ſix maſter's mates, twenty-four midſhipmen, and five ſurgeon's mates, who are conſidered as gentlemen; beſides the following petty officers: quarter-maſters, and their mates, fourteen; boatſwains mates and yeomen, eight; gunners mates and aſſiſtants, ſix; quarter-gunners, twenty-five; carpenters mates, two, beſides fourteen aſſiſtants; with one ſteward, and ſteward's mate to the purſer.

If the dimenſions of all ſhips of the ſame rate were equal, it would be the ſimpleſt and moſt perſpicuous method to collect them into one point of view in a table; but as there is no invariable rule for the general dimenſions, it muſt ſuffice to remark thoſe of ſome particular ſhips in each rate; for which purpoſe we have ſelected ſome of the lateſt conſtruction.

The Victory, which is the laſt built of our firſt rates, is 222 feet 6 inches in length, from the head to the ſtern; the length of her keel, 151 feet 3 inches; that of her gun-deck, or lower deck, 186 feet; her extreme breadth is 51 feet 10 inches; her depth in the *hold*, 21 feet 6 inches; her burthen 2162 tons; and her poop reaches 6 feet before the mizen-maſt.

Ships of the ſecond rate carry 90 guns upon three decks, of which thoſe on the lower battery are 32 pounders; thoſe on the middle 18 pounders; on the upper-deck, 12 pounders; and thoſe on the quarter-deck, 6 pounders, which uſually amount to four or ſix. Their complement of men is 750, in which there are ſix lieutenants, four maſter's mates, twenty-four midſhipmen, and four ſurgeon's mates, fourteen quarter-maſters and their mates, eight boatſwain's mates and yeomen, ſix gunner's mates and yeomen, with twenty-two quarter-gunners, two carpenter's mates, with ten aſſiſtants, and one ſteward and ſteward's mate.

Ships of the third rate carry from 64 to 80 cannon, which are 32, 18, and 9 pounders. The 80-gun ſhips however begin to grow out of repute, and to give way to thoſe of 74, 70, &c. which have only two whole batteries; whereas the former have three, with 28 guns planted on each, the cannon of their upper-deck being the ſame as thoſe on the quarter-deck and fore-caſtle of the latter, which are 9 pounders. The complement in a 74 is 650, and in a 64, 500 men; having, in peace, 4 lieutenants, but in war, 5; and when an admiral is aboard, 6. They have 3 maſter's mates, 16 midſhipmen, 3 ſurgeon's mates, 10 quarter-maſters and their mates, 6 boatſwain's mates and yeomen, 4 gunner's mates and yeomen, with 18 quarter-gunners, 1 carpenter's mate, with 8 aſſiſtants, and 1 ſteward and ſteward's mate under the purſer.

Ships of the fourth rate mount from 60 to 50 guns, upon two decks, and the quarter-deck. The lower tier is compoſed of 24 pounders, the upper

tier

tier of 12 pounders, and the cannon on the quarter-deck and fore-caſtle are 6 pounders. The complement of a 50 gun ſhip is 350 men, in which there are three lieutenants, 2 maſter's mates, 10 midſhipmen, 2 ſurgeon's mates, 8 quarter-maſters and their mates, 4 boatſwain's mates and yeomen, 1 gunner's mate and 1 yeoman, with 12 quarter-gunners, 1 carpenter's mate and 6 aſſiſtants, and a ſteward and ſteward's mate.

All veſſels of war, under the fourth rate, are uſually comprehended under the general name of frigates, and never appear in the line of battle. They are divided into the 5th and 6th rates, the former mounting from 40 to 32 guns, and the latter from 28 to 20. The largeſt of the fifth rate have two decks of cannon, the lower battery being of 18 pounders, and that of the upper-deck of 9 pounders; but thoſe of 36 and 32 guns have only one complete deck of guns, mounting 12 pounders, beſides the quarter-deck and fore-caſtle, which carry 6 pounders. The complement of a ſhip of 44 guns, is 280 men; and that of a frigate of 36 guns, 240 men. The firſt has 3, and the ſecond 2 lieutenants; and both have 2 maſter's mates, 6 midſhimen, 2 ſurgeon's mates, 6 quarter-maſters and their mates, 2 boatſwain's mates, and 1 yeoman, 1 gunner's mate and 1 yeoman, with 10 or 11 quarter-gunners, and 1 purſer's ſteward.

Frigates of the 6th rate carry 9 pounders, thoſe of 28 guns having 3 pounders on their quarter-deck, with 200 men for their complement; and thoſe of 24, 160 men; the former has 2 lieutenants, the latter, 1; and both have 2 maſter's mates, 4 midſhipmen, 1 ſurgeon's mate, 4 quarter-maſters and their mates, 1 boatſwain's mate and 1 yeoman, 1 gunner's mate and 1 yeoman, with 6 or 7 quarter-gunners, and 1 purſer's ſteward.

The ſloops of war carry from 18 to 8 cannon, the largeſt of which have 6 pounders; and the ſmalleſt, viz. thoſe of 8 and 10 guns, 4 pounders. Their officers are generally the ſame as in the 6th rates, with little variation; and their complements of men are from 120 to 60, in proportion to their force or magnitude.

N. B. Bomb-veſſels are on the ſame eſtabliſhment as ſloops; but fire-ſhips and hoſpital-ſhips are on that of fifth rates.

Having already exhibited the dimenſions of the largeſt firſt rate in our navy, we have, in the following table, collected thoſe of the inferior rates:

Rates.	Guns.	Length of the keel. Feet. Inch.	Length of the lower deck. Feet. Inch.	Extreme breadth. Feet. Inch.	Depth in the hold. Feet. Inch.	Burthen in tons.
2d rate, Barfleur,	90	144 ¾	177 6	50	21	1934
3d rate, Arrogant,	74	138	168 3	47 4	19 9	1644
3d rate, Europa,	64	139	159	44 4	19 4	1366
4th rate, Saliſbury,	50	120 8	146	40 4	17 4	1044
5th rate, Phœnix,	44	116 11	140 9	37 1 ½	16	856
5th rate, Venus,	36	106 3	128 4 ½	35 9	12 4	722
6th rate, Carysfort,	28	97 3 ½	118 4	33 8	10 6	586
6th rate, Dolphin,	24	93 4	113	32 1	11	511
Sloop, Nautilus,	16	80 7 ½	98	27 2	12 8	316

Nothing

Nothing more evidently manifeſts the great improvement of the marine art, and the degree of perfection to which it has arrived in England, than the facility of managing our firſt rates; which were formerly eſteemed incapable of government, unleſs in the moſt favourable weather of the ſummer. In teſtimony of this obſervation we may, with great propriety, produce the example of the Royal George, which, during the whole courſe of the late war, was known to be as eaſily navigated, and as capable of ſervice, as any of the inferior ſhips of the *line*, and that frequently in the moſt tempeſtuous ſeaſons of the year. The ingenious M. Du Hamel, who is eminently diſtinguiſhed for his knowledge of marine affairs, has indeed judiciouſly objected to the defects and bad qualities of ſuch large ſhips *. It is nevertheleſs hardly poſſible for any Engliſhman, who was witneſs to the defeat of M. Conflans, by the victorious Sir Edward Hawke, on the ever-memorable 20th of November 1759, to avoid diſſenting a while from that gentleman's opinion. In reality, a fact, confirmed by repeated experience, muſt unavoidably triumph over all theoretical concluſions.

Ships of the ſecond rate, and thoſe of the third, which have three decks, carry their ſails remarkably well, and labour very little at ſea. They are excellent in a general action, or in cannonading a fortreſs. Thoſe of the third rate, which have two tiers, are fit for the line of battle, to lead the convoys and ſquadrons of ſhips of war in action, and in general, to ſuit the different exigencies of the naval ſervice.

The fourth rates may be employed on the ſame occaſions as the third rates, and may be alſo deſtined amongſt the foreign colonies, or on expeditions of great diſtance; ſince theſe veſſels are uſually excellent for keeping and ſuſtaining the ſea.

Veſſels of the fifth rate are too weak to ſuffer the ſhock of a line of battle; but they may be deſtined to lead the convoys of merchant-ſhips, to protect the commerce in the colonies, to cruize in different ſtations, to accompany ſquadrons, or be ſent expreſs with neceſſary intelligence and orders. The ſame may be obſerved of the ſixth rates.

The frigates, which mount from 28 to 38 guns upon one deck, with the quarter-deck, are extremely proper for cruizing againſt privateers, or for ſhort expeditions, being light, long, and uſually excellent ſailers.

RATLINGS, *(enflechures*, Fr.*)* certain ſmall lines which traverſe the *ſhrouds* of a ſhip horizontally, at regular diſtances from the deck upwards, and forming a variety of ladders, whereby to climb to any of the maſt-heads, or deſcend from them. Hence the term is apparently derived from *rath*, an obſolete word, ſignifying a hill.

In order to prevent the ratling from ſlipping down by the weight of the ſailors, they are firmly attached by a knot, called a *clove-hitch*, to all the

* The ſame gentleman obſerves, that a ſhip of two decks, ſuch as are generally all thoſe of the third and fourth rates, cannot be ſo ſtrongly connected as one that is furniſhed with three: a veſſel pierced for 15 guns on one ſide of her deck muſt neceſſarily be very long, and is ſometimes apt to droop at the two ends; or, in the ſea-phraſe, to *break her back* under the enormous weight of her artillery.

ſhrouds,

ſhrouds, except the foremoſt or aftmoſt; where one of the ends, being fitted with an eye-ſplice, is previouſly faſtened with twine or packthread.

REACH, *(ræcan*, Sax.) the line, or diſtance, comprehended between any two points or ſtations on the banks of a river, wherein the current flows in a ſtrait uninterrupted courſe.

REAR, *(arriere*, Fr.) a name given to the laſt diviſion of a ſquadron, or the laſt ſquadron of a fleet, and which is accordingly commanded by the third officer of the ſaid fleet or ſquadron. See the article DIVISION.

REEF, *(ris*, Fr. *reef*, Dutch) a certain portion of a ſail, comprehended between the top or bottom, and a row of eyelet-holes parallel thereto.

The intention of the reef is to reduce the ſurface of the ſail in proportion to the increaſe of the wind; for which reaſon there are ſeveral reefs parallel to each other in the ſuperior ſails, whereby they may be ſtill further diminiſhed, in order to correſpond with the ſeveral degrees of the gale. Thus the top-ſails of ſhips are uſually furniſhed with three reefs, *l m n*, fig. 1. plate IX. parallel to the yard; and there are always three or four reefs, parallel to the bottom on thoſe main-ſails and fore-ſails, which are extended upon booms: a circumſtance common to many of the ſmall veſſels.

REEF alſo implies a chain of rocks, lying near the ſurface of the water.

REEF-BAND, a piece of canvas, ſewed acroſs the ſail, to ſtrengthen it in the place where the eyelet-holes of the reefs are formed.

REEFING, the operation of reducing a ſail, by taking in one or more of the reefs, which is either performed by lines, *points*, or *knittles*.

Thus the top-ſails are always, and the courſes generally, reefed with points, which are flat braided pieces of cordage, whoſe lengths are nearly double the circumference of the yard. Theſe being inſerted in the eyelet-holes, are fixed in the ſail by means of two knots in the middle, one of which is before, and the other behind the reef-band.

In order to reef the top-ſails with more facility and expedition, they are lowered down and made to *ſhiver* in the wind, which conſiderably relaxes their tenſion. The extremities of the reef are then drawn up to the *yard-arms* by an aſſemblage of pullies communicating with the deck, termed the *reef-tackle*; and they are ſecurely faſtened to the yard-arms by ſmall cords, called *earings*. The ſpace of ſail, comprehended in the reef, is then laid ſmoothly over the yard, in ſeveral folds or doubles: and the whole is completed by tying the points about the yard, ſo as to bind the reef cloſe up to it.

The courſes of large ſhips are either reefed with points or ſmall cords, which are thence called *reef-lines*. In the latter caſe, the line is paſſed ſpirally through the eyelet-holes of the reef, and over the head of the ſail alternately, and afterwards ſtrained as tight as poſſible. It muſt be obſerved, however, that the reef-line is ſometimes paſſed round the yard, and ſometimes only round the head of the ſail; and each of theſe methods have their advocates, with arguments more or leſs convincing. But if it ſhould appear eſſential to prevent the friction by which a ſail is galled between the line and the yard; and as the rope-bands are ſufficient to ſuſtain the effort of the

ſail, it is certainly much better to paſs the line only round the ſail, provided that the turns are inſerted through the *reband-legs*; a circumſtance which is carefully practiſed by every ſkilful ſailor.

The ſame reaſon may be alledged, with equal propriety, in favour of tying the points of the courſes in the ſame manner; that is to ſay, the after-end of the point ſhould be thruſt forward between the head of the ſail and the yard; and the fore-leg of the ſaid point ſhould come aft over the head of the ſail, and alſo under the yard: and thus croſſed over the head of the ſail, the point ſhould be extended, and the two ends brought over the yard, and tied on the upper ſide of it as ſtrait as poſſible.

When a ſail is reefed at the bottom, it is done by *knittles*, which being thruſt through the eyelet-holes thereof, are tied firmly about the ſpace of canvas of which the reef is compoſed, and knotted on the lower ſide of the bolt-rope. Theſe knittles are accordingly removed as ſoon as the reef is let out.

Beſides the manner above-deſcribed, there are other methods of reducing a ſail to the ſtorm, as explained in the articles Goose-Wing and Balance.

REEF-TACKLE, a rope which paſſes from the deck to a *block* at the topmaſt-head, and thence to another block at the topſail-yard-arm, where it communicates with another rope, called it's *pendent*, that runs downwards through a hole in the yard, and is afterwards attached to a *cringle*, a little below the loweſt reef, as exhibited by fig. 1. plate IX. where *h* is the reef-tackle, and *i* the pendent thereof. It is uſed, as we have already obſerved, to pull the ſkirts of the reefs cloſe up to the extremities of the topſail-yards, in order to lighten the ſail, the weight of which would otherwiſe render it very difficult to perform this operation.

REEL *of the log*. See the article Log.

To REEVE, is to paſs the end of a rope through any hole, as the channel of a block, the cavity of a thimble, cleat, ring-bolt, &c.

RECKONING. See Dead-Reckoning.

REFITTING, is generally underſtood to imply the repairing any damages, which a ſhip may have ſuſtained in her ſails or rigging, by battle or tempeſtuous weather; but more particularly by the former. See Engagement and Repair.

REIGNING-WINDS, a name given to the winds which uſually prevail on any particular coaſt or region, the knowledge of which is eſſentially neceſſary to every pilot who is charged with the navigation in thoſe ſeas.

RELIEVING-TACKLES, two ſtrong tackles uſed to prevent a ſhip from overturning on the *careen*, and to aſſiſt in bringing her upright after that operation is completed.

The relieving-tackles are furniſhed with two ſtrong *guys*, (*attrapes*, Fr.) or *pendents*, by which their efforts are communicated, under the ſhip's bottom, to the oppoſite ſide, where the ends of the guys are attached to the lower gun-ports. The other ends of the tackles are hooked to the wharf, or *pontoon*, by which the veſſel is careened. Thus if the ſhip is firſt to be laid

down on the larboard-ſide, which is neareſt the wharf, the relieving-tackles are paſſed under her bottom from the ſaid wharf, and attached to the ſtarboard-ſide, by which they will reſtrain her from falling lower than is neceſſary. See RIGHTING.

RELIEVING-TACKLE, is alſo a name ſometimes given to the train-tackles of a gun-carriage. See CANNON and EXERCISE.

RENDERING, as a ſea-term, is generally underſtood to be the effect of yielding, or giving way, without reſiſtance, to the efforts of ſome mechanical power. It is uſually expreſſed of a complicated tackle, *lanyard*, or *laſhing*, when the effect of the power applied is communicated with facility to all the parts, without being interrupted in it's paſſage. It is therefore uſed in contra-diſtinction to ſticking or jamming.

RENDEZVOUS, the port, or place of deſtination, where the ſeveral ſhips of a fleet or ſquadron are appointed to rejoin the whole, in caſe of a ſeparation, occaſioned by tempeſtuous weather, or other unforeſeen accident.

REPAIR, (*radoub*, Fr.) the operation of amending any injuries, or ſupplying any deficiencies, which a ſhip may have received by age, battle, tempeſtuous weather, &c.

The repair is neceſſarily greater or ſmaller, in proportion to the loſs which the veſſel has ſuſtained. Accordingly a ſuitable number of the *timbers*, *beams*, or *planks*, or a ſufficient part of either, are removed, and new pieces fixed in their places. The whole is completed by *breaming*, *caulking*, and *paying* the body with a new compoſition of ſtuff. See DOCKING.

REPRISE, a ſhip which is retaken from the enemy, ſoon after the firſt capture; or at leaſt before ſhe has arrived in any neutral or hoſtile port.

If a veſſel, thus retaken, has been twenty-four hours in the poſſeſſion of the enemy, it is deemed a lawful prize; but if it be retaken within that time, it is to be reſtored to the proprietor, with every thing therein, upon his allowing one third to the veſſel who made the repriſe. Alſo if the repriſe has been abandoned by the enemy, either in a tempeſt, or from any other cauſe, before it has been led into any port, it is to be reſtored to the proprietor.

RETREAT, the order or diſpoſition in which a fleet of French men of war decline engagement, or fly from a purſuing enemy*.

RHOMB-LINE, a line prolonged from any point of the compaſs on a nautical chart, except the four cardinal points.

* The reader, who wiſhes to be expert in this manœuvre, will find it copiouſly deſcribed by ſeveral ingenious French writers, particularly L'Hôte, Saverien, Morogues, Bourdé, and Ozane; who have given accurate inſtructions, deduced from experience, for putting it in practice when occaſion requires. As it is not properly a term of the Britiſh marine, a more circumſtantial account of it might be conſidered foreign to our plan. It has been obſerved in another part of this work (*a*), that the French have generally exhibited greater proofs of taſte and judgment in the ſculpture, with which their ſhips are decorated, than the Engliſh; the ſame candour and impartiality obliges us to confeſs their ſuperior dexterity in this movement.

(*a*) See the article HEAD.

RIBBANDS, *liſſes*, Fr. (from *rib* and *bend*) in naval architecture, long narrow flexible pieces of timber, nailed upon the outſide of the ribs, from the *ſtem* to the *ſtern-poſt*, ſo as to envelop the ſhip lengthways, and appear on her ſide and bottom like the meridians on the ſurface of the globe.

The ribbands, being judiciouſly arranged with regard to their heighth and diſtance from each other, and forming regular ſweeps about the ſhip's body, will compoſe a kind of frame, whoſe interior ſurface will determine the curve of all the intermediate, or filling-timbers, which are ſtationed between the principal ones. As the figure of the ſhip's bottom approaches to that of a conoid, and the ribbands having a limited breadth, it is apparent, that they cannot be applied to this convex ſurface without forming a double curve, which will be partly vertical and partly horizontal; ſo that the vertical curve will increaſe by approaching the ſtem, and ſtill more by drawing near the ſtern-poſt. It is alſo evident, that by deviating from the middle line of the ſhip's length, as they approach the extreme breadth at the *midſhip-frame*, the ribbands will alſo form an horizontal curve. The loweſt of theſe, which is terminated upon the ſtem and ſtern-poſt, at the heighth of the *riſing-line of the floor*, and anſwers to the upper part of the floor-timber upon the midſhip-frame, is called the *floor*-ribband. That which coincides with the *wing-tranſom*, at the height of the lower-deck upon the midſhip-frame, is termed the *breadth*-ribband: all the reſt, which are placed between theſe two, are called intermediate ribbands.

From this double curve it reſults, that the ribbands will appear in different points of view, when delineated upon different planes of the ſame ſhip. To conceive this, let us ſuppoſe the ſkeleton of a ſhip upon the ſtocks, as in plate IV. fig. 11. and plate X. fig. 2. with the ribbands repreſented by dotted lines upon her bottom. If a ſpectator is placed oppoſite to the ſtem or ſtern-poſt, on a line prolonged from the keel, he will only view the projection of the ribbands on the plane of the midſhip-frame, in which the horizontal curve is very little perceived; he will diſcover part of the vertical curve, which riſes continually from the extreme breadth towards the ſtem and ſtern, ſo that they muſt be drawn upon the plane of projection as oblique lines, which terminate upon the midſhip-frame at the point where the ribband touches it, and upon the ſtem and ſtern-poſt at the point where their ends are lodged.

If the ſpectator were to change his poſition, and perceive the projection of the ribbands upon a plane, ſuppoſed to be elevated upon the length of the keel, he would alſo diſcover their vertical curve, as it is ſometimes expreſſed in the ſheer-draught, without diſtinguiſhing the horizontal one.

But if we imagine the eye of the ſpectator placed conſiderably above the ſhip, on a line perpendicular to the middle of the keel, he will then diſcover the projection of the ribbands upon the plane of the ground beneath the ſhip, and view the horizontal curve, (ſee the *horizontal plane*, plate I.) without perceiving the perpendicular one.

In order to give the reader as diſtinct an idea as poſſible of the ribbands, we have, beſides the above repreſentations, exhibited a perſpective view of

them in the frame or ſkeleton of a ſmall veſſel, referred to, from the article TIMBER.

RIBS *of a ſhip*, a figurative expreſſion for the timbers. See that article.

RIBS *of a parrel*. See PARREL.

RIDERS, a ſort of interior ribs, fixed occaſionally in a ſhip's hold oppoſite to ſome of the principal timbers, and reaching from the kelſon to the beams of the lower-deck, and ſometimes higher, in order to ſtrengthen her frame. They are bolted to the other timbers, to ſupport them when it is apprehended the ſhip is not ſufficiently ſtrong in the part where they are fixed; which is generally amidſhips.

The riders have alſo their floor-pieces and futtocks, and ſometimes their top-pieces, all of which are ſcarfed to each other in the ſame manner as in the timbers.

The riders ought to be ſtationed ſo as to lie between two ports of the lower deck, and to correſpond with the timbers to which they are attached, in ſuch a manner, as that the ſcarfs of the riders may be clear of thoſe of the timbers. They are ſcored upon the kelſon, clamps, and thick-ſtuff of the bottom. They are ſecured by bolts, which are driven from without, ſo as to penetrate the outſide planks, the timbers, the clamps, and the riders; on the inſide of which laſt they are fore-locked. See thoſe articles.

Theſe pieces are rarely uſed in merchant-ſhips, becauſe they would be extremely inconvenient in the hold, beſides occupying too large a ſpace thereof; neither are they always uſed in veſſels of war, at leaſt till after the ſhip is enfeebled by ſeveral cruizes at ſea.

RIDGE, a long aſſemblage of rocks, lying near the ſurface of the ſea, ſo as to intercept the paſſage of a ſhip under ſail. See alſo REEF and SHALLOW.

RIDING, when expreſſed of a ſhip, is the ſtate of being retained in a particular ſtation, by means of one or more cables with their anchors, which are for this purpoſe ſunk into the bottom of the ſea, &c. in order to prevent the veſſel from being driven at the mercy of the wind or current. See MOORING. A rope is ſaid to ride, when one of the turns by which it is wound about the *capſtern* or *windlaſs* lies over another, ſo as to interrupt the operation of heaving.

RIDING *athwart*, the poſition of a ſhip which lies acroſs the direction of the wind and tide, when the former is ſo ſtrong as to prevent her from falling into the current of the latter.

RIDING *between the wind and tide*, the ſituation of a veſſel at anchor, when the wind and tide act upon her in direct oppoſition; in ſuch a manner as to deſtroy the effort of each other upon her hull; ſo that ſhe is in a manner balanced between their reciprocal force, and rides without the leaſt ſtrain on her cables.

When a ſhip does not labour heavily, or feel a great ſtrain when anchored in an open road or bay, ſhe is ſaid to ride eaſy. On the contrary, when ſhe pitches violently into the ſea, ſo as to ſtrain her cables, maſts, or hull, it is called riding hard, and the veſſel is termed a bad roader.

A ſhip is rarely ſaid to ride when ſhe is faſtened at both the ends, as in a harbour or river, that ſituation being comprehended in the article MOORING.

RIGGING, a general name given to all the ropes employed to ſupport the maſts; and to extend or reduce the ſails, or arrange them to the diſpoſition of the wind.

The former, which are uſed to ſuſtain the maſts, remain uſually in a fixed poſition, and are called *ſtanding* rigging; ſuch are the *ſhrouds*, *ſtays*, and *back-ſtays*. The latter, whoſe office is to manage the ſails, by communicating with various blocks, or pullies, ſituated in different places of the *maſts*, *yards*, *ſhrouds*, &c. are comprehended in the general term of *running*-rigging. Such are the *braces*, *ſheets*, *haliards*, *clue-lines*, *brails*, &c.

In rigging a maſt, the firſt thing uſually fixed upon it's head, is a circular wreath or rope, called the *grommet*, or collar, which is firmly beat down upon the top of the *hounds*. The intent of this is to prevent the ſhrouds from being fretted or worn by the *treſtle-trees*, or ſhoulders of the maſt; after this are laid on the two *pendents*, from whoſe lower ends the main, or fore-tackles are ſuſpended; and next, the *ſhrouds* of the ſtarboard and larboard ſide, in pairs, alternately. The whole is covered by the *ſtays*, which are the largeſt ropes of the rigging.

When a yard is to be rigged, a grommet is alſo driven firſt on each of it's extremities: next to this are fitted-on the *horſes*, the *braces*; and, laſtly, the *lifts*, or *top-ſail ſheet*-blocks: all of which are explained in their proper places.

The principal objects to be conſidered in rigging a ſhip appear to be ſtrength, convenience, and ſimplicity; or the properties of affording ſufficient ſecurity to the maſts, yards, and ſails; of arranging the whole machinery in the moſt advantageous manner, to ſuſtain the maſts, and facilitate the management of the ſails; and of avoiding perplexity, and rejecting whatever is ſuperfluous or unneceſſary. The perfection of this art then conſiſts in retaining all thoſe qualities, and in preſerving a judicious medium between them.

RIGGING-OUT *a boom*, the operation of running out a pole upon the end of a yard, or bowſprit, to extend the foot of a ſail. Theſe booms are confined in thoſe places by double rings, formed like a figure of 8, one part of which is faſtened to the reſpective yard-arm, or bowſprit-end, and the other receives the boom, which is occaſionally rigged out, or drawn in through it. The rings uſed in this ſervice, are termed *boom-irons*.

RIGHTING, (*relever*, Fr.) the act of reſtoring a ſhip to her upright poſition, after ſhe has been laid on a *carcen*, by the mechanical powers uſually applied in that operation.

This is generally the natural effect of caſting looſe the careening pullies by which ſhe had been drawn down. It is however neceſſary ſometimes to apply mechanical powers to right the ſhip in ſuch a ſituation. The principal of theſe are the relieving-tackles. See that article.

A ſhip is alſo ſaid to right at ſea when ſhe riſes, with her maſts erected, after having been preſt down on one ſide by the effort of her ſails, or a heavy ſquall of wind.

RIGHTING,

RIGHTING, when expreſſed of the helm, implies the replacing it in the middle of the ſhip, after having produced the required effect, of wheeling her to the right or left, as much as appeared neceſſary.

RIM, or BRIM, a name given to the circular edge of any of the *tops*. See that article.

RING-BOLT, (*cheville à boucle*, Fr.) an iron bolt, with an eye at one end, wherein is fitted a circular ring, as expreſſed in fig. 3. and 4. plate II. The ring-bolts are for ſeveral uſes, but particularly to hook the *tackles*, by which the cannon of a ſhip are managed and ſecured: accordingly there is one fixed in the deck oppoſite to every cannon, repreſented by Z, plate III. DECK: and they are, for the ſame purpoſe, fixed in the edges of the gun-ports, as expreſſed in the MIDSHIP-FRAME, plate VII. They are driven through the plank and the correſponding beam, or timber, and retained in this poſition by a ſmall pin thruſt through a hole in the ſmall end, as appears in fig. 39. plate II.

RING-ROPES, ſhort pieces of rope, tied occaſionally to the ring-bolts of the deck, to faſten the cable more ſecurely when the ſhip rides in a tempeſt, or turbulent ſea, or rapid current. They are, however, more particularly neceſſary in veering away the cable gradually in thoſe circumſtances, in order to *freſhen the hawſe*; as, without this precaution, it would be extremely difficult to check the cable, which, being then charged with a great effort, might be drawn violently out of the ſhip at random.

RING-TAIL, a ſmall triangular ſail, extended on a little maſt, which is occaſionally erected for that purpoſe on the top of a ſhip's ſtern. The lower part of this ſail is ſtretched out by a boom, which projects from the ſtern horizontally. This ſail is only uſed in light and favourable winds, particularly in the Atlantic ocean.

RING-TAIL is alſo a name given to a ſort of *ſtudding-ſail*, hoiſted beyond the after-edge or ſkirt of thoſe main-ſails which are extended by a *boom* and gaff; as in all *ſloops*, *brigs*, and *ſchooners*: this ring-tail is accordingly of the ſame depth with that part of the main-ſail upon which it borders. See SAIL.

RIPPLING, a broken and interrupted noiſe, produced by a current on or near the ſea-coaſt.

RISING-LINE, a name given by ſhipwrights to an incurvated line, which is drawn on the plane of elevation, to determine the height of the ends of all the *floor-timbers* throughout the ſhip's length, and which accordingly aſcertains the figure of the bottom, with regard to ſharpneſs and flatneſs.

ROAD, (*rade*, Fr.) a bay, or place of anchorage, at ſome diſtance from the ſhore, on the ſea-coaſt, whither ſhips or veſſels occaſionally repair to receive intelligence, orders, or neceſſary ſupplies; or to wait for a fair wind, &c.

The excellence of a road conſiſts chiefly in it's being protected from the reigning winds, and the ſwell of the ſea; in having a good *anchoring-ground*, and being at a competent diſtance from the ſhore. Thoſe which are not ſufficiently incloſed are termed open roads.

ROADER,

ROADER, a veſſel riding at anchor in a road, bay, or river. If a veſſel under ſail ſtrikes againſt any roader, and damages her in paſſing, the former is obliged by law to make good the damages ſuſtained by the latter.

The roaders attentively obſerve to anchor, or moor, at a competent diſtance from each other; and that thoſe which arrive laſt ſhall not moor in the track of the ſhipping which anchored before, ſo as to intercept their paſſage when they are ready to depart.

ROBANDS, or ROPE-BANDS. See ROPE-BAND.

ROGUES-YARN, a name given to a rope-yarn, of a particular conſtruction, which is placed in the middle of every *ſtrand*, in all cables and cordage in the king's ſervice. It differs from all the reſt, as being untarred, and twiſted in a contrary manner, by which it is eaſily diſcovered. The uſe of this contrivance is to examine whether any cordage, ſuppoſed to be ſtolen or embezzled, has been formed for the king's ſervice.

ROLLER, a cylindrical piece of timber, fixed either horizontally or perpendicularly above a ſhip's deck, ſo as to revolve about an axis. It is uſed to prevent the *cables*, *hawſers*, &c. from being chafed by the friction which their ſurfaces would otherwiſe encounter, from bearing againſt that part of the ſhip, where the roller is placed, whilſt they are drawn into the ſhip, &c. by mechanical powers.

ROLLERS, are alſo moveable pieces of wood, of the ſame figure, which are occaſionally placed under planks, or long pieces of timber, in order to move them with greater facility either in the *dock*-yards, or in lading and delivering merchant-ſhips.

ROLLING, the motion by which a ſhip rocks from ſide to ſide like a cradle, occaſioned by the agitation of the waves.

ROLLING, therefore, is a ſort of revolution about an imaginary axis, paſſing through the center of gravity of a ſhip: ſo that the nearer the center of gravity is to the keel, the more violent will be the rolling-motion; becauſe the center about which the vibrations are made, is placed ſo low in the bottom, that the reſiſtance made by the keel to the volume of water which it diſplaces in rolling, bears very little proportion to the force of the vibration above the center of gravity, the radius of which extends as high as the maſt-heads.

But if the center of gravity is placed higher above the keel, the radius of vibration will not only be diminiſhed, but an additional force to oppoſe the motion of rolling will be communicated to that part of the ſhip's bottom, which is below the center of gravity.

So far as relates to the effect of rolling, when produced by the quality or ſtowage of the ballaſt, and to the manner by which it may be prevented, *viz.* a change of the quantity or diſpoſition of the ballaſt, we ſhall endeavour to explain under the article TRIM. It may, however, be neceſſary to remark, that the conſtruction of the ſhip's bottom may alſo contribute to diminiſh this movement conſiderably.

To illuſtrate this by an example, let us ſuppoſe the ſection of a ſhip perpendicular to the keel to be exactly circular, plate VIII. fig. 8. it is evident, that

that if this be agitated in the water, it will have nothing to ſuſtain it, becauſe the rolling or rotation about it's center diſplaces no more water than when it remains upright: conſequently the rolling motion muſt be very great in a high ſea. But if a plank is fixed below it edgeways, or perpendicular to the ſurface, as low as *e*, throughout the whole length of the ſhip, it is plain that the plank *e* will diſplace a volume of water to the right, when the ſhip is inclined to the left, which will retard her motion; and this obſtruction will always act contrary to her *heeling* or inclination to one ſide, and greatly diminiſh the vibration or rolling; although it will add very little to her ſtiffneſs: For, admitting the ſhip to incline to one ſide, as in fig. 8. the plank *d e* would produce a very weak effort to bring her upright. But the depth of the keel, the riſing of the floors, and the dead wood fore and aft, as in fig. 9. plate VIII. will anſwer the ſame purpoſe as the plank *d e*.

Many fatal diſaſters have happened to ſhips, ariſing from a violent rolling; as the loſs of the maſts, looſening of the cannon, and ſtraining violently on the decks and ſides, ſo as to weaken the ſhip to a great degree. See BALLAST, LABOURING, and PITCHING.

ROLLING-TACKLE, a pulley or purchaſe faſtened to that part of a ſail-yard which is to the windward of the maſt, in order to confine the yard cloſe down to the leeward when the ſail is furled.

It is uſed to prevent the yard from having a great friction againſt the maſt in a high ſea, which would be equally pernicious to both.

ROPES, (*cordes*, Fr. *rap*, Sax. *reep*, Dutch) a general name given to all ſorts of cordage, above one inch in circumference, uſed in the rigging a ſhip. See CABLE, HAWSER, TOWLINE, and WARP.

ROPES are either cable-laid or hawſer-laid: the former are compoſed of nine *ſtrands*, viz. three great ſtrands, each of which is compoſed of three ſmaller ſtrands; and the latter is made with three ſtrands, each of which contains a certain number of rope yarns, in proportion to the ſize of the rope required.

ROPE-BANDS, (*rabans*, Fr.) pronounced roebins, certain pieces of ſmall rope, or braided cordage, uſed to tie the upper edges of the great ſails to their reſpective yards. They are inſerted through the eyelet-holes in the head of the ſail, being generally of a ſufficient length to paſs two or three times about the ſaid yard.

ROPE-YARN, (*fil de carret*, Fr.) the ſmalleſt and ſimpleſt part of any rope, being one of the threads of which a *ſtrand* is compoſed; ſo that the ſize of the latter, and of the rope into which it is twiſted, is determined by the number of rope-yarns.

ROVER, a pirate or free-booter. See PIRATE.

ROUGH-TREE, a name given in merchant-ſhips to any maſt, yard, or boom, placed as a rail or fence above the ſhip's ſide, from the quarter-deck to the fore-caſtle. It is, however, with more propriety, applied to any maſt, &c. which remains rough and unfiniſhed.

ROUND-

ROUND-HOUSE, a name given, in Eaſt-Indiamen, and other large merchant-ſhips, to a cabin or apartment built in the after part of the quarter-deck, and having the poop for it's roof. The apartment is uſually called the coach in our ſhips of war.

ROUNDING, certain old ropes wound firmly and cloſely about that part of a cable which lies in the *hawſe*, or under the ſhip's *bow*, or athwart the ſtem. It is uſed to prevent the ſurface of the cable from being chafed or fretted in thoſe places. See the article KAICLING and SERVICE.

ROUNDING-IN generally implies the act of pulling upon any rope which paſſes through one or more blocks, in a direction nearly horizontal; as, round-in the weather-braces! &c. It is apparently derived from the circular motion of the rope about the *ſheave* or pulley through which it paſſes.

ROUNDING-UP is uſed nearly in the ſame ſenſe, only that it is expreſſed of a *tackle* which hangs in a perpendicular poſition, without ſuſtaining or hoiſting any weighty body: it is then the operation of pulling the blocks cloſer to each other, by means of the rope which paſſes through them, to compoſe the tackle; and is therefore oppoſed to *over-hauling*, by which the blocks are drawn further aſunder.

To ROW, (*ramer*, Fr. *rowan*, Sax.) to impel a boat or veſſel along the ſurface of the water by oars, which are managed in a direction nearly horizontal. See OAR.

ROW-GALLEY. See the article GALLEY.

ROW-LOCKS, thoſe parts of the *gunwale*, or upper edge of a boat's ſide, whereon the oar reſts in the exerciſe of rowing. In the ſides of the ſmalleſt veſſels of war, a number of little ſquare holes, called row-ports, are cut for this purpoſe, parallel to the ſurface of the water.

ROWERS, (*rameurs*, Fr.) a name given to the perſons by whom the oars are managed.

ROWING-GUARD. See GUARD-BOAT.

ROWSING, the act of pulling together upon a cable, hawſer, &c. without the aſſiſtance of *tackles*, *capſterns*, or other mechanical powers. It is particularly uſed in the exerciſe of removing a ſhip from one place to another, by means of ropes and anchors. See the article WARPING.

ROYAL, (*boulingue*, Fr.) a name given to the higheſt ſail which is extended in any ſhip. It is ſpread immediately above the top-gallant-ſail, to whoſe yard-arms the lower corners of it are attached. This ſail is never uſed but in light and favourable breezes.

RUDDER. See the article HELM.

RUN, the aftmoſt or hindmoſt part of a ſhip's bottom, where it grows extremely narrow, as the floor approaches the ſtern-poſt.

RUNG-HEADS, (*fleurs*, Fr.) a name ſometimes given by ſhipwrights to the upper ends of the floor-timbers, which are otherwiſe more properly called floor-heads. See NAVAL ARCHITECTURE.

RUNNER, (*itague*, Fr.) a thick rope uſed to increaſe the mechanical powers of a *tackle*. See that article.

The runner *a*, fig. 10. plate VIII. paſſes through a large hook-block, as *c*, and has uſually a hook *b* attached to one of it's ends, and one of the tackle blocks to the other; and in applying it, the hook, as well as the lower block of the correſponding tackle, is fixed to the object intended to be removed.

RUNNING-OUT *a warp*, the act of carrying the end of a rope out from the ſhip, in a boat, and faſtening it to ſome diſtant place, to remove the ſhip towards the ſaid place, or keep her ſteady whilſt her anchors are lifted, &c.

RUNNIG-RIGGING, all that part of a ſhip's rigging which paſſes through the blocks, to dilate, contract, or traverſe the ſails. See the article RIGGING.

S.

SADDLE, a ſmall *cleat*, or wooden block, hollowed on the upper and lower ſide, and nailed on the lower *yard-arms*, to retain the ſtudding-ſail-*booms* in a firm and ſteady poſition. For this purpoſe the cavity on the lower part of the ſaddle conforms to the cylindrical ſurface of the yard to which it is attached: and in like manner the hollow, on the upper ſide, anſwers to the figure of the boom, and ſerves as a channel whereby it may be run out or in, along the yard, as occaſion requires.

SAGGING *to leeward*, the movement by which a ſhip makes a conſiderable *lee-way*, or is driven far to leeward of the courſe whereon ſhe apparently ſails. It is generally expreſſed of heavy-ſailing veſſels, as oppoſed to keeping well to windward, or, in the ſea-phraſe, holding a good wind.

SAIC, a ſort of Grecian ketch, which has no top-gallant-ſail or mizen-top-ſail. See KETCH.

SAIL, (*voile*, Fr. *ſegl*, Sax. *ſeyhel*, *ſeyl*, Dutch) an aſſemblage of ſeveral breadths of canvas, or other texture, ſewed together, and extended on, or between the *maſts*, to receive the wind, and carry the veſſel along the water.

The edges of the *cloths*, or pieces, of which a ſail is compoſed, are generally ſewed together with a double ſeam: and the whole is ſkirted round at the edges with a cord, called the *bolt-rope*.

Although the form of ſails is extremely different, they are all nevertheleſs triangular or quadrilateral figures; or, in other words, their ſurfaces are contained either between three or four ſides.

The former of theſe are ſometimes ſpread by a *yard*, as *lateen*-ſails; and otherwiſe by a *ſtay*, as *ſtay*-ſails; or by a maſt, as ſhoulder-of-mutton-ſails: in all which caſes the foremoſt *leech* or edge is attached to the ſaid yard, maſt, or ſtay, throughout it's whole length. The latter, or thoſe which are four-ſided, are either extended by yards, as the principal ſails of a ſhip; or by yards and booms, as the *ſtudding*-ſails, *drivers*, *ring-tails*, and all thoſe ſails which are ſet occaſionally; or by *gaffs* and booms, as the *main-ſails* of *ſloops* and *brigantines*.

The principal ſails of a ſhip (fig. 1. plate IX.) are the courſes or lower ſails *a*, the *top-ſails b*, which are next in order above the courſes; and the top-gallant-ſails *c*, which are expanded above the top-ſails.

The courſes are the main-ſail, fore-ſail, and mizen, main-ſtay-ſail, fore-ſtay-ſail and mizen-ſtay-ſail; but more particularly the three firſt.

N. B. The main-ſtay-ſail is rarely uſed except in ſmall veſſels.

In all quadrangular ſails the upper edge is called the head; the ſides or ſkirts are called leeches; and the bottom or lower edge is termed the foot. If the head is parallel to the foot, the two lower corners are denominated *clues*, and the upper corners earings.

In all triangular ſails, and in thoſe four-ſided ſails wherein the head is not parallel to the foot, the foremoſt corner at the foot is called the tack; and the after lower-corner the clue; the foremoſt perpendicular or ſloping edge is called the *fore* leech, and the hindmoſt the *after* leech.

The heads of all four-ſided ſails, and the fore-leeches of lateen ſails, are attached to their reſpective yard or gaff by a number of ſmall cords called robands; and the extremities are tied to the yard-arms, or to the peek of the gaff, by *earings*.

The ſtay-ſails are extended upon ſtays between the maſts, whereon they are drawn up or down occaſionally, as a curtain ſlides upon it's rod, and their lower parts are ſtretched out by a tack and ſheet. The clues of a topſail are drawn out to the extremities of the lower yard, by two large ropes called the top-ſail ſheets; and the clues of the top-gallant-ſails are in like manner extended upon the top-ſail yard-arms, as exhibited by plate IX. fig. 1.

The ſtudding-ſails are ſet beyond the leeches or ſkirts of the main-ſail and fore-ſail, or of the top-ſails or top-gallant-ſails of a ſhip. Their upper and lower edges are accordingly extended by poles run out beyond the extremities of the yards for this purpoſe. Thoſe ſails however are only ſet in favourable winds and moderate weather.

All ſails derive their name from the maſt, yard, or ſtay upon which they are extended. Thus the principal ſail extended upon the main-maſt is called the main-ſail, *grande voile*, *d*, fig. 2. plate IX. the next above, which ſtands upon the main-top-maſt, is termed the main-top-ſail, *grand hunier*, *e*; and the higheſt, which is ſpread acroſs the main-top-gallant-maſt, is named the main-top-gallant-ſail, *grand perroquet*, *f*.

In the ſame manner there is the fore-ſail, *miſaine*, *g*; the fore-top-ſail, *petit hunier*, *h*; and the fore-top-gallant-ſail, *petit perroquet*, *i*; the mizen, *artimon*, *k*; the mizen top-ſail, *perroquet d'artimon*, *l*; and mizen top-gallant-ſail, *m*. Thus alſo there is the main ſtay-ſail *o*; main-top-maſt ſtay-ſail *p*; and main-top-gallant ſtay-ſail *q*; with a middle ſtay-ſail which ſtands between the two laſt. *N. B.* All theſe ſtays-ſails are between the main and fore-maſts.

The ſtay-ſails (*voiles d'etai*, Fr.) between the main-maſt and mizen-maſt are the mizen ſtay-ſail *r*; and the mizen top-maſt ſtay-ſail *s*; and ſometimes a mizen top-gallant ſtay-ſail above the latter.

The ſtay-ſails between the fore-maſt and the bowſprit are the fore ſtay-ſail *t*; the fore-top-maſt ſtay-ſail *u*; and the jib, *foc*, *x*. There is beſides two ſquare ſails extended by yards under the bowſprit, one of which is called the ſprit-ſail, *civadiere*, *y*; and the other the ſprit-ſail top-ſail *z*, *perroquet de beaupré*. For the French names of all the ſtay-ſails, ſee the French term ETAI, and the phraſes following it.

The ſtudding-ſails, (*bonnettes en étui*, Fr.) being extended upon the different yards of the main-maſt and fore-maſt, are likewiſe named according to their ſtations, the lower, top-maſt, or top-gallant ſtudding ſails.

The ropes by which the lower yards of a ſhip are hoiſted up to their proper heighth on the maſts, are called the *jears*. In all other ſails the ropes employed for this purpoſe are called *haliards*.

The principal ſails are then expanded by haliards, ſheets, and bowlines, except the courſes, which are always ſtretched out below by a *tack* and ſheet. See BOWLINE, CLOSE-HAULED, *&c.* They are drawn up together, or truſſed up, by *bunt-lines*, *clue-lines*, *d d*, fig. 1. *leech-lines*, *e e*; *reef-tackles*, *f f*; *ſtab-line*, *g*; and *ſpilling-lines*. As the bunt-lines and leech-lines paſs on the other ſide of the ſail, they are expreſſed by dotted lines in the figure. See thoſe articles.

The courſes, top-ſails, and top-gallant ſails, are wheeled about the maſt, ſo as to ſuit the various directions of the wind by *braces*. The higher ſtudding-ſails, and in general all the ſtay-ſails, are drawn down, ſo as to be furled, or taken in, by down-hauls. See BRACE, TRIM, and DOWN-HAUL.

SAIL is alſo a name applied to any veſſel beheld at a diſtance under ſail.

To ſet SAIL, (*faire voile*, Fr.) is to unfurl and expand the ſails, upon their reſpective yards and ſtays, in order to begin the action of ſailing.

To make SAIL, is to ſpread an additional quantity of ſail, ſo as to increaſe the ſhip's velocity.

To ſhorten SAIL, is to reduce or take in part of the ſails, with an intention to diminiſh the ſhip's velocity.

To ſtrike SAIL, is to lower it ſuddenly. This is particularly uſed in *ſaluting* or doing homage to a ſuperior force, or to one whom the law of nations acknowledges as ſuperior in certain regions: Thus all foreign veſſels ſtrike to an Engliſh man of war in the Britiſh ſeas. See SALUTE.

SAILING, the movement by which a veſſel is wafted along the ſurface of the water, by the action of the wind upon her ſails.

When a ſhip changes her ſtate of reſt into that of motion, as in advancing out of a harbour, or from her ſtation at anchor, ſhe acquires her motion very gradually, as a body which arrives not at a certain velocity till after an infinite repetition of the action of it's weight.

The firſt impreſſion of the wind greatly affects the velocity, becauſe the reſiſtance of the water might deſtroy it, ſince the velocity being but ſmall at firſt, the reſiſtance of the water which depends on it will be very feeble: but as the ſhip increaſes her motion, the force of the wind on the ſails will be diminiſhed; whereas on the contrary the reſiſtance of the water on the *bow* will accumulate, in proportion to the velocity with which the veſſel advances. Thus the repetition of the degrees of force, which the action of the ſails adds to the motion of the ſhip, is perpetually decreaſing; whilſt on the contrary the new degrees added to the effort of reſiſtance on the bow are always augmenting. The velocity is then accelerated in proportion as the quantity added is greater than that which is ſubtracted: but when the two powers become equal, when the impreſſion of the wind on the ſails has loſt ſo much of it's force, as only to act in proportion to the oppoſite impulſe or reſiſtance on the bow, the ſhip will then acquire no additional velocity, but continue to ſail with a conſtant uniform motion. The great weight of the ſhip may indeed prevent her from acquiring her greateſt velocity; but when ſhe has attained it, ſhe will advance by her own intrinſic motion, without gaining any new degree of velocity, or leſſening what ſhe has acquired. She moves then by

her own proper force *in vacuo*, without being afterwards ſubject either to the effort of the wind on the ſails, or to the reſiſtance of the water on the bow. If at any time the impulſion of the water on the bow ſhould deſtroy any part of the velocity, the effort of the wind on the ſails will revive it, ſo that the motion will continue the ſame. It muſt however be obſerved, that this ſtate will only ſubſiſt when theſe two powers act upon each other in direct oppoſition; otherwiſe they will mutually deſtroy one another. The whole theory of working ſhips depends on this counter-action, and the perfect equality which ſhould ſubſiſt between the effort of the wind and the impulſion of the water. *Bouguer, Traité du navire.*

The effect of ſailing is produced by a judicious arrangement of the ſails to the direction of the wind. Accordingly the various modes of ſailing are derived from the different degrees and ſituations of the wind with regard to the courſe of the veſſel.

To illuſtrate this obſervation by examples, the plan of a number of ſhips proceeding on various courſes are repreſented by fig. 3. plate IX. which exhibits the thirty-two points of the compaſs, of which C is the center: the direction of the wind, which is northerly, being expreſſed by the arrow.

It has been obſerved in the article CLOSE-HAULED, that a ſhip in that ſituation will ſail nearly within ſix points of the wind. Thus the ſhips B and *y* are cloſe-hauled, the former being on the larboard *tack*, ſteering E. N. E. and the latter on the ſtarboard tack ſailing W. N. W. with their yards *a b* braced obliquely, as ſuitable to that manner of ſailing. The *line* of battle on the larboard tack would accordingly be expreſſed by C B, and on the ſtarboard by C *y*.

When a ſhip is neither cloſe-hauled, nor ſteering afore the wind, ſhe is in general ſaid to be ſailing *large*. The relation of the wind to her courſe is preciſely determined by the number of points between the latter and the courſe *cloſe-hauled*. Thus the ſhips *c* and *x* have the wind one point large, the former ſteering E. *b* N. and the latter W. *b* N. The yards remain almoſt in the ſame poſition as in B and *y*: the bowlines and *ſheets* of the ſails being only a little ſlackened.

The ſhips *d* and *u* have the wind two points large, the one ſteering eaſt and the other weſt. In this manner of ſailing, however, the wind is more particularly ſaid to be upon the *beam*, (*perpendiculaire du vent*, Fr.) as being at right angles with the keel, and coinciding with the poſition of the ſhip's beams. The yards are now more acroſs the ſhip, the bowlines are caſt off, and the ſheets more relaxed; ſo that the effort of the wind being applied nearer to the line of the ſhip's courſe, her velocity is greatly augmented.

In *e* and *t* the ſhips have the wind three points large, or one point *abaft* the beam, the courſe of the former being E. *b* S. and that of the latter W. *b* S. The ſheets are ſtill more flowing; the angle which the yards make with the keel further diminiſhed; and the courſe accelerated in proportion.

The ſhips *f* and *ſ*, the firſt of which ſteers E. S. E. and the ſecond W. S. W. have the wind four points large, or two points abaft the beam. In *g* and *r* the wind is five points large, or three points abaft the beam, the former ſailing S. E. *b* E. and the latter S. W. *b* W. In both theſe ſituations the

ſheets

ſheets are ſtill further ſlackened, and the yards laid yet more athwart the ſhip's length, in proportion as the wind approaches the *quarter*.

The ſhips *b* and *q*, ſteering S. E. and S. W. have the wind ſix points large, or more properly on the quarter; which is conſidered as the moſt favourable manner of ſailing, becauſe all the ſails co-operate to increaſe the ſhip's velocity: whereas, when the wind is right aft, as in the ſhip *m*, it is evident, that the wind, in it's paſſage to the foremoſt ſails, will be intercepted by thoſe which are further aft. When the wind is on the quarter, the fore-tack is brought to the cat-head; and the main-tack being caſt off, the weather-clue of the main-ſail is hoiſted up to the yard, in order to let the wind paſs freely to the fore-ſail; and the yards are diſpoſed ſo as to make an angle of about two points, or nearly 22°, with the keel.

The ſhips *i* and *p*. of which the former ſails S. E. *b* S. and the latter S. W. *b* S. are ſaid to have the wind three points on the larboard or ſtarboard quarter: and thoſe expreſſed by *k* and *o*, two points; as ſteering S. S. E. and S. S. W. in both which poſitions the yards make nearly an angle of 16°, or about a point and an half, with the ſhip's length.

When the wind is one point on the quarter, as in the ſhips *l* and *n*, whoſe courſes are S. *b* E. and S. *b* W. the ſituation of the yards and ſails is very little different from the laſt mentioned; the angle which they make with the keel being ſomewhat leſs than a point, and the ſtay-ſails being rendered of very little ſervice. The ſhip *m* ſails right afore the wind, or with the wind right aft. In this poſition the yards are laid at right angles with the ſhip's length: the ſtay-ſails, being entirely uſeleſs, are hauled down: and the main-ſail is drawn up in the brails, that the fore-ſail may operate; a meaſure which conſiderably facilitates the ſteerage, or effort of the helm. As the wind is then intercepted, by the main top-ſail and main-top-gallant-ſail, in it's paſſage to the fore top-ſail and fore top-gallant-ſail, theſe latter are by conſequence entirely *becalmed*, and might therefore be furled, to prevent their being fretted by flapping againſt the maſt, but that their effort contributes greatly to prevent the ſhip from *broaching-to*, when ſhe deviates from her courſe to the right or left thereof.

Thus all the different methods of ſailing may be divided into four, viz. cloſe-hauled, large, quartering, and afore the wind; all which relate to the direction of the wind with regard to the ſhip's courſe, and the arrangement of the ſails. See alſo DRIFT and LEEWAY.

Order of SAILING, the general diſpoſition of a fleet of ſhips when proceeding on a voyage or expedition.

It has already been obſerved in the article FLEET, that the moſt convenient order of ſailing, for a ſquadron of ſhips, is in three parallel columns, ſo as to form the line of battle with greater facility and expedition. In this diſpoſition, the ſtation of each ſhip is previouſly appointed by the commander in chief; and the ranks or columns are as near to each other as regularity, and a regard for their common ſecurity, will admit. This diſtance, which ought to be carefully obſerved in tacking, may be regulated by the movements of ſome of the ſhips in the column furtheſt to windward, which ſhould accordingly govern the operations of the whole ſquadron. See TACKING.

SAILING alſo implies a particular mode of navigation, formed on the principles, and regulated by the laws of trigonometry. Hence we ſay, plain ſailing, mercator's, middle-latitude, parallel and great circle ſailing. See the artitle NAVIGATION.

SAILOR, (*matelot*, Fr.) a ſeafaring man: a perſon trained in the exerciſe of fixing the machinery of a ſhip, and managing her, either at ſea, or in a road, or harbour.

SAIL-YARD. See the article YARD.

SALLY-PORT. See the article FIRE-SHIP.

SALVAGE, a third part of the value of any thing recovered from the enemy, after having remained in his poſſeſſion twenty-four hours; or of any thing dragged up from the bottom of the ſea. It is paid by the firſt proprietors to the perſons who have ſo recovered it, or elſe detained legally by the latter.

SALUTE, (*ſalut*, Fr. from *ſaluto*, Lat.) a teſtimony of deference or homage rendered by the ſhips of one nation to another; or by ſhips of the ſame nation to a ſuperior or equal.

This ceremony is variouſly performed, according to the circumſtances, rank, or ſituation of the parties. It conſiſts in firing a certain number of cannon, or vollies of ſmall arms; in ſtriking the colours or top-ſails; or in one or more general ſhouts of the whole ſhip's crew, mounted on the maſts or rigging for that purpoſe.

The principal regulations with regard to ſalutes in the royal navy are as follow:

'When a flag-officer ſalutes the admiral and commander in chief of the fleet, he is to give him fifteen guns; but when captains ſalute him, they are to give him ſeventeen guns. The admiral or commander in chief of the fleet is to return two guns leſs to flag-officers, and four leſs to captains. Flag-officers ſaluting their ſuperior or ſenior officer, are to give him thirteen guns. Flag-officers are to return an equal number of guns to flag-officers bearing their flags on the ſame maſt, and two guns leſs to the reſt, as alſo to captains.

'When a captain ſalutes an admiral of the white or blue, he is to give him fifteen guns; but to vice and rear admirals, thirteen guns. When a flag-officer is ſaluted by two or more of his Majeſty's ſhips, he is not to return the ſalute till all have finiſhed, and then to do it with ſuch a reaſonable number of guns as he ſhall judge proper.

'In caſe of the meeting of two ſquadrons, the two chiefs only are to exchange ſalutes. And if ſingle ſhips meet a ſquadron conſiſting of more than one flag, the principal flag only is to be ſaluted. No ſalutes ſhall be repeated by the ſame ſhips, unleſs there has been a ſeparation of ſix months at leaſt.

'None of his Majeſty's ſhips of war, commanded only by captains, ſhall give or receive ſalutes from one another, in whatſoever part of the world they meet.

'A flag-officer commanding in chief ſhall be ſaluted, upon his firſt hoiſting his flag, by all the ſhips preſent, with ſuch a number of guns as is allowed by the firſt, third, or fifth articles.

'When

'When any of his Majeſty's ſhips ſhall meet with any ſhip or ſhips belonging to any foreign prince or ſtate, within his Majeſty's ſeas, (which extend to Cape Finiſterre) it is expected, that the ſaid foreign ſhips do ſtrike their top-ſail, and take in their flag, in acknowledgment of his Majeſty's ſovereignty in thoſe ſeas: and if any ſhall refuſe, or offer to reſiſt, it is enjoined to all flag-officers and commanders to uſe their utmoſt endeavours to compel them thereto, and not ſuffer any diſhonour to be done to his Majeſty. And if any of his Majeſty's ſubjects ſhall ſo much forget their duty, as to omit ſtriking their top-ſail in paſſing by his Majeſty's ſhips, the name of the ſhip and maſter, and from whence, and whither bound, together with affidavits of the fact, are to be ſent up to the ſecretary of the admiralty, in order to their being proceeded againſt in the admiralty-court. And it is to be obſerved, that in his Majeſty's ſeas, his Majeſty's ſhips are in no ways to ſtrike to any; and that in no other parts, no ſhip of his Majeſty's is to ſtrike her flag or top-ſail to any foreigner, unleſs ſuch foreign ſhip ſhall have firſt ſtruck, or at the ſame time ſtrike her flag or top-ſail to his Majeſty's ſhip.

'The flag-officers and commanders of his Majeſty's ſhips are to be careful to maintain his Majeſty's honour upon all occaſions, giving protection to his ſubjects, and endeavouring, what in them lies, to ſecure and encourage them in their lawful commerce; and they are not to injure, in any manner, the ſubjects of his Majeſty's friends and allies.

'If a foreign admiral meets with any of his Majeſty's ſhips, and ſalutes them, he ſhall receive gun for gun. If he be a vice-admiral, the admiral ſhall anſwer with two guns leſs. If a rear-admiral, the admiral and vice-admiral ſhall return two leſs. But if the ſhip be commanded by a captain only, the flag officers ſhall give two guns leſs, and captains an equal number.

'When any of his Majeſty's ſhips come to an anchor in a foreign port or road, within cannon-ſhot of it's forts, the captain may ſalute the place with ſuch a number of guns as have been cuſtomary, upon good aſſurance of having the like number returned, but not otherwiſe. But if the ſhip bears a flag, the flag-officer ſhall firſt carefully inform himſelf how flags of like rank, belonging to other crowned heads, have given or returned ſalutes, and to inſiſt upon the ſame terms of reſpect.

'It is allowed to the commanders of his Majeſty's ſhips in foreign parts, to ſalute the perſons of any admirals, commanders in chief, or captains of ſhips of war of foreign nations, and foreign noblemen or ſtrangers of quality, as alſo the factories of the king's ſubjects, coming on board to viſit the ſhip; and the number of guns is left to the commander, as ſhall be ſuitable to the occaſion, and the quality of the perſons viſiting; but he is nevertheleſs to remain accountable for any exceſſes in the abuſe of this liberty. If the ſhip viſited be in company with other ſhips of war, the captain is not to make uſe of the civilities allowed in the preceding article, but with leave and conſent of the commander in chief, or the ſenior captain.

'Merchant-ſhips, whether foreigners, or belonging to his Majeſty's ſubjects, ſaluting the admiral of the fleet, ſhall be anſwered by ſix guns leſs; when they ſalute any other flag-ſhips, they ſhall be anſwered by four guns leſs; and if they ſalute men of war commanded by captains, they ſhall be anſwered

anſwered by two guns leſs. If ſeveral merchant-ſhips ſalute in company, no return is to be made, till all have finiſhed, and then by ſuch a number of guns as ſhall be thought proper; but though the merchant-ſhips ſhould anſwer, there ſhall be no ſecond return.——

'None of his Majeſty's ſhips of war ſhall ſalute any of his Majeſty's forts or caſtles in Great Britain or Ireland, on any pretence whatſoever.' *Regulations and Inſtructions for the Sea-ſervice.*

SALT-PITS, (*marais ſalant*, Fr.) reſervoirs on a coaſt, to contain ſea-water for the purpoſes of making ſalt.

SAMSONS-POST, (*piedroit*, Fr.) a ſort of pillar erected in a ſhip's hold, between the lower deck and the *kelſon*, under the edge of a hatchway, and furniſhed with ſeveral notches that ſerve as ſteps to mount or deſcend, as occaſion requires.

This poſt, being firmly driven into it's place, not only ſerves to ſupport the beam, and fortify the veſſel in that place, but alſo to prevent the cargo or materials contained in the hold from ſhifting to the oppoſite ſide, by the rolling of the ſhip in a turbulent and heavy ſea.

SAUCER. See the article CAPSTERN.

SCALE *of equal parts*, (*echelle*, Fr.) alſo the name of a ſea-port in *Provence.*

SCALING *the guns*, (*ſouffler*, Fr.) the act of cleaning the inſide of a ſhip's cannon, by the exploſion of a ſmall quantity of powder; which effectually blows out any dirt or ſcales of iron which may adhere to the interior ſurface.

SCANTING, (*addoner*, Fr.) the variation of the wind by which it becomes unfavourable to a ſhip's courſe, after having been *fair* or *large*. It is diſtinguiſhed from a foul wind, as in the former a ſhip is ſtill enabled to ſail on her courſe, although her progreſs is conſiderably retarded; but in the latter ſhe is obliged to deviate from the line of her courſe, as explained in the article TACKING.

SCANTLING, (*echantillons*, Fr.) the dimenſions of any piece of timber with regard to it's breadth and thickneſs in ſhip-building.

SCARF, (*empature*, Fr. *ſcherven*, Dutch) a particular method of uniting two pieces of timber together by the extremities.

When two pieces of timber are joined together, ſo that the end of one goes over the end of the other, being tapered ſo that the one may be let into the other, and become even, they are ſaid to be ſcarfed: ſuch are the keel-pieces. But when the ends of the two pieces are cut ſquare, and put together, they are ſaid to *butt* to one another: and when another piece is laid upon, and faſtened to both, as is the caſe in all the frame-timbers, this is called ſcarfing the timbers; and half the piece which faſtens the two timbers together is reckoned the length of the ſcarf. *Murray's ſhip-building.*

SCHOONER, a ſmall veſſel with two maſts, whoſe main-ſail and fore-ſail are ſuſpended from *gaffs* reaching from the maſt towards the ſtern; and ſtretched out below by booms, whoſe foremoſt ends are hooked to an iron, which claſps the maſt ſo as to turn therein as upon an axis, when the after-ends are ſwung from one ſide of the veſſel to the other.

SCOOP, (*écoupe*, Fr.) a little hollowed piece of wood, employed to throw water out of a boat into the ſea, which is uſually called bailing the boat.

SCRAPING, the act of ſhaving off the dirty ſurface of the plank, in a ſhip's ſide or decks, particularly after a voyage, or when the *ſeams* have been covered with a new compoſition of melted pitch or roſin. The inſtrument with which this is performed is accordingly called a ſcraper, and is repreſented in fig. 4. plate IX.

After the ſides of a ſhip are ſufficiently ſcraped, they are varniſhed over with turpentine, or a mixture of tar and oil, or ſuch materials; which preſerves the planks from being rent or ſplit by the ſun and wind, and gives the ſhip a more gay and ſplendid appearance on the water.

SCUD, a name given by ſeamen to the loweſt and lighteſt clouds, which are moſt ſwiftly wafted along the atmoſphere by the winds.

SCUDDING, (*Skutta*, Swediſh) the movement by which a ſhip is carried precipitately before a tempeſt.

As a ſhip flies with amazing rapidity through the water, whenever this expedient is put in practice, it is never attempted in a contrary wind, unleſs when her condition renders her incapable of ſuſtaining the mutual effort of the wind and waves any longer on her ſide, without being expoſed to the moſt imminent danger. See the article TRYING.

A ſhip either ſcuds with a ſail extended on her fore-maſt, or, if the ſtorm is exceſſive, without any ſail, which in the ſea-phraſe is called ſcudding under *bare poles*, (*aller à ſec.* Fr.) In ſloops and ſchooners, and other ſmall veſſels, the ſail employed for this purpoſe is called the ſquare-ſail, (*voile de fortune*, Fr.) In large ſhips, it is either the foreſail, at large, *reefed*, or with it's *gooſe-wings* extended, according to the degree of the tempeſt; or it is the fore-top-ſail cloſe reefed, and lowered on the *cap:* which laſt is particularly uſed when the ſea runs ſo high as to *becalm* the foreſail occaſionally; a circumſtance which expoſes the ſhip to the danger of *broaching-to.*

The principal hazards incident to ſcudding are generally, a *pooping* ſea; the difficulty of ſteering, which expoſes the veſſel perpetually to the riſk of broaching-to; and the want of ſufficient ſea-room. A ſea ſtriking the ſhip violently on the ſtern may daſh it inwards, by which ſhe muſt inevitably *founder.* In broaching-to ſuddenly, ſhe is threatened with being immediately overſet; and, for want of ſea-room, ſhe is endangered by ſhipwreck on a lee-ſhore; a circumſtance too dreadful to require explanation!

SCUPPERS, (*dalots*, Fr. *ſchoepen*, Dutch, *to draw off*) certain channels cut through the water-ways and ſides of a ſhip, at proper diſtances, and lined with pla ed lead, in order to carry the water off from the deck into the ſea.

The ſcuppers of the lower deck of a ſhip of war are uſually furniſhed with a leathern pipe, called the ſcupper-hoaſe, which hangs downward from the mouth or opening of the ſcupper. The intent of this is to prevent the water from entering when the ſhip inclines under a weight of ſail.

SCUTTLE, (*écoutille*, Fr.) a ſmall hatchway cut for ſome particular purpoſe through a ſhip's deck, or through the coverings of her hatchways, and furniſhed with a lid which firmly incloſes it whenever neceſſary. See DECK and HATCHWAY.

SCUTTLING, the act of cutting large holes through the bottom or ſides of a ſhip, either when ſhe is *ſtranded* or overſet, and continues to float on the ſurface. The deſign of this expedient is uſually to take out the whole or a part of the cargo, proviſions, ſtores, &c. with all poſſible expedition.

SEA,

SEA, (*mer*, Fr. *ſæ*, Sax. *zee*, Dutch) is known to be a great congregation of waters, which is either univerſal or local; as ſurrounding the whole earth, or flowing on the coaſt of ſome particular country.

This term, however, is variouſly applied by ſailors, to a ſingle wave; to the agitation produced by a multitude of waves in a tempeſt; or to their particular progreſs or direction. Thus they ſay, a heavy ſea broke over our *quarter*, or we *ſhipped* a heavy ſea; there is a great ſea in the *offing*; the ſea ſets to the ſouthward. Hence a ſhip is ſaid to head the ſea, when her courſe is oppoſed to the *ſetting* or direction of the ſurges.

A long ſea implies an uniform and ſteady motion of long and extenſive waves; on the contrary, a ſhort ſea is when they run irregularly, broken, and interrupted; ſo as frequently to burſt over a veſſel's ſide or quarter.

SEA-BOAT, (*vaiſſeau beau de mer*, Fr.) a veſſel that bears the ſea firmly, without labouring heavily, or ſtraining her maſts and rigging.

SEA-COAST, the ſhore of any country; or that part which is waſhed by the ſea.

SEA-CLOTHS, (*habits de bord*, Fr.) jackets, trowſers, &c.

SEA-FARING, the occupation of a mariner or ſailor.

SEAMAN, (*homme de mer*, Fr.) a mariner or perſon trained in the exerciſe of fixing the machinery of a ſhip, and applying it to the purpoſes of navigation.

The principal articles required in a common ſailor to intitle him to the full wages, are, that he can ſteer, ſound, and manage the ſails, by extending, *reefing*, and furling them, as occaſion requires. When he is expert at theſe exerciſes, his ſkill in all other matters relative to his employment is taken for granted.

SEA-MARK, a point or conſpicuous place diſtinguiſhed at ſea.

Sea-marks are of various kinds, as ſteeples, promontories, piles of ruins, groupes of trees, &c. and are very neceſſary to direct veſſels on the coaſt of their ſituation. See alſo BEACON and BUOY.

SEA-ROOM, (*belle derive*, Fr.) implies a ſufficient diſtance from the coaſt, as well as from any rocks or ſhallows, whereby a ſhip may drive or ſcud without danger of ſhipwreck.

SEA-WEEDS, (*ſarts*, Fr.) a ſort of herbs or tangles floating on the ſurface of the ſea, or waſhed upon the ſea-coaſt. See the French term MER, and the phraſes which follow in order.

SEAMS, (*coutures*, Fr.) the intervals between the edges of the planks in the decks and ſides of a ſhip; or the places where the planks join together. Theſe are always filled with a quantity of *oakum*, and covered with hot pitch, to prevent the entrance of the water. See the article CAULKING.

SEIZING, (*amarrer*, Fr.) the operation of faſtening any two ropes, or different parts of one rope together, with a ſmall line or cord: alſo the cord (*amarrage*) which faſtens them.

SELVAGE, a ſort of hank or ſkein of rope-yarn tied together at ſeveral diſtances. It is uſed to faſten round any rope, as a ſhroud or ſtay, ſo that a tackle may be hooked in it, to extend the ſaid ſhroud or ſtay, which is called ſetting it up.

SENDING, the act of pitching precipitately into the hollow, or interval, between two waves.

SENNIT, (*garcettes*, Fr. from *ſeven* and *knit*) a ſort of flat braided cordage, formed by plaiting five or ſeven rope-yarns together.

SERVING, (*fourrer*, Fr.) winding any thing round a rope, to prevent it from being rubbed. The materials uſed for this purpoſe, and which are accordingly called *ſervice*, *fourrure*, are generally ſmall lines, leather, *plat* canvas, &c.

SETTEE, (*ſcitie*, Fr.) a ſhip of two maſts, equipped with triangular ſails, commonly called lateen ſails. Theſe veſſels are peculiar to the Mediterranean ſea, and are generally navigated by Italians, Greeks, or Mahometans.

SETTING, the act of obſerving the ſituation of any diſtant object by the compaſs, in order to diſcover the angle which it makes with the neareſt meridian; as, at ſeven in the evening, we ſet the Tower of Arabia near the port of Alexandria, and it bore S.S.E. diſtant four leagues by eſtimation. See BEARING.

SETTING alſo denotes the direction of the wind, current, or ſea, but particularly the two latter: as, the tide which ſets to the ſouth, is oppoſed to a ſwelling ſea ſetting to the north-weſt.

SETTING, when applied to the ſails, is the looſening and expanding them, ſo as to move a ſhip along the water, after ſhe had been for ſome time at reſt; or to accelerate her velocity when ſhe is already moving, and perhaps give a new direction to her motion. It is uſed in contradiſtinction to taking-in the ſails, as looſing or heaving-out is oppoſed to furling or ſtowing them.

SETTING-UP, the act of extending the *ſhrouds*, *ſtays*, and *back-ſtays*, to ſecure the maſts, by the application of mechanical powers, as tackles, &c. See DEAD-EYE, LANIARD, &c.

SETTLED, lowered in the water; as, we have ſettled the land, or ſunk it lower, by ſailing further out to ſeaward. This phraſe is uſually oppoſed to raiſing; the former being occaſioned by departing from the object underſtood, and the latter by approaching it: however, the ſenſe is more commonly expreſſed *laying*.

SEWED, the ſituation of a ſhip which reſts upon the ground till the depth of water ſufficient to float her is diminiſhed by the reflux of the tide. Thus if a ſhip runs aground on the tide of ebb, and it be required to know if ſhe has ſewed, the water line or mark on her ſide, ſtem, or ſtern-poſt, where the ſurface of the water reaches when ſhe is a float, is examined, and this mark being found above the water, ſhe is ſaid to be ſewed by as much as is the difference.

SHAKES, (*ébaroui*, Fr.) a name given by ſhipwrights to the cracks or rents in a plank, occaſioned by the ſun or weather.

SHALLOP, a ſort of large boat with two maſts, and uſually rigged like a *ſchooner*.

SHANK, the beam or ſhaft of an *anchor*. See that article.

SHANK-PAINTER, a ſhort rope and chain which hangs the ſhank and flukes of the anchor up to the ſhip's ſide, as the *ſtopper* faſtens the ring and ſtock to the cat-head.

To SHAPE *the coruſe*, (*commander à la route*, Fr.) to direct or appoint the track of a ſhip, in order to proſecute a voyage.

SHARP. See BOTTOM.

SHEATHING, (*doublage*, Fr.) a ſort of caſing or covering laid on the outſide of a ſhip's bottom, to protect the planks from the pernicious effects of the worms: particularly in hot climates, as between the tropics.

Sheathing either conſiſts of a number of boards or deals of fir, or of ſheets of lead or copper; which laſt is a very late invention, having been only experienced on a few of his Majeſty's frigates: it ſeems, however, to anſwer the purpoſe much better than the fir-planks. When the ſheathing is performed with boards, there is a quantity of hair and tar inſerted between the outſide of the bottom, and the inner ſurface of the boards.

SHEAVE, (*rouet*, Fr. *ſchiif*, Dutch) a ſolid cylindrical wheel, fixed in a channel, and moveable about an axis, as being uſed to raiſe or increaſe the mechanical powers applied to remove any body.

The ſheaves are either fixed in blocks, or in channels cut through the maſts, caps, cat-heads, or ſides of a ſhip. See thoſe articles.

SHEEP-SHANK: a ſort of knot or hitch caſt on a rope, to ſhorten it as occaſion requires: particularly to increaſe the ſweep or length of a tackle by contracting it's *runner*. By this contrivance the body to which the tackle is applied may be hoiſted much higher, or removed much further, in a ſhorter time.

Thus if any weighty body is to be hoiſted into a ſhip, and it be found that the blocks of the tackle meet before the object can reach the top of the ſide, it will be neceſſary to lower it again, or hang it by ſome other method, till the *runner* of the tackle is ſheep-ſhanked, by which the blocks will again be ſeparated to a competent diſtance.

SHEER, (*relevement*, Fr.) the longitudinal curve of a ſhip's deck or ſides.

SHEERING, in navigation, the act of deviating or ſtraying from the line of the courſe, either to the right or left, ſo as to form a crooked and irregular path through the water. It is commonly occaſioned by the ſhip's being difficult to ſteer, but very often from the negligence or incapacity of the helmſman. Hence, to *ſheer off* is to remove at a greater diſtance.

SHEERS, (*machine à mater*, Fr.) an engine uſed to hoiſt-in or diſplace the lower maſts of a ſhip. See the article MAST.

The ſheers employed for this purpoſe in the royal navy are deſcribed under the article *hulk*. In merchant-ſhips this machine is compoſed of two maſts or props, erected in the ſame veſſel wherein the maſt is to be planted, or from whence it is be removed. The lower ends of theſe props reſt on the oppoſite ſides of the deck, and their upper parts are faſtened acroſs, ſo as that a *tackle*, which depends from the interſection, may be almoſt perpendicularly above the ſtation of the maſt, to which the mechanical powers are applied. Theſe ſort of ſheers are ſecured by ſtays, which extend forward and aft to the oppoſite extremities of the veſſel.

SHEET, (*écoute*, Fr.) a rope faſtened to one or both the lower corners of a ſail, to extend and retain it in a particular ſtation. See CLUE and SAIL.

When

When a ſhip ſails with a lateral wind, the lower corner of the main and fore ſail are faſtened by a tack and a ſheet; the former being to windward and the latter to leeward: the tack, however, is entirely diſuſed with a ſtern-wind; whereas the ſail is never ſpread without the aſſiſtance of one or both of the ſheets.

The ſtay-ſails and ſtudding-ſails have only one tack and one ſheet each: the ſtay-ſail tacks are always faſtened forward, and the ſheet drawn *aft*; but the ſtudding-ſail-tack draws the outer clue of the ſail to the extremity of the bottom; whereas the ſheet is employed to extend the inmoſt.

To haul home the SHEET. See HOME.

SHEET-ANCHOR. See the article ANCHOR.

SHELL, in artillery. See MORTAR and RANGE.

SHELL *of a block*, the outer frame or caſe, wherein the *ſheave* or wheel is contained, and traverſes about it's axis. See BLOCK.

SHELVES, *(écueils*, Fr. *ſchylf*, Sax.*)* a general name given to any dangerous ſhallows, ſand-banks, or rocks lying immediately under the ſurface of the water, ſo as to intercept any ſhip in her paſſage, and expoſe her to deſtruction.

SHIFTED, *(deſarrimée*, Fr.) the ſtate of a ſhip's ballaſt or cargo when it is ſhaken from one ſide to the other, either by the violence of her *rolling* in a turbulent ſea, or by an extraordinary inclination to one ſide when under a great preſſure of ſail. This circumſtance, however, rarely happens, unleſs to thoſe cargoes which are ſtowed in *bulk*, as corn, ſalt, or ſuch materials. See LADEN and TRIM.

SHIFTED, *(ſeuté*, Fr.) when expreſſed of the wind, implies altered.

SHIFTER, *(detrempeur*, Fr.) a perſon appointed to aſſiſt the ſhip's cook, particularly in waſhing, ſteeping, and ſhifting the ſalt proviſions.

SHIFTING *a tackle*, the act of removing the blocks of a tackle to a greater diſtance from each other, on the object to which they are applied, in order to give a greater ſcope or extent to their purchaſe. This operation is otherwiſe called fleeting. See that article.

SHIFTING *the helm*, *(rencontrer*, Fr.) is the alteration of it's poſition, by puſhing it towards the oppoſite ſide of the ſhip. See HELM.

SHIFTING *the voyal*, *(depaſſer*, Fr.*)* changing it's poſition on the capſtern from the right to the left, and *vice verſa*.

SHIP, *(vaiſſeau*, Fr. *ſcip*. Sax.) a general name given by ſeamen to the firſt rank of veſſels which are navigated on the ocean.

Amongſt people who are unacquainted with marine diſtinctions, this term is of very vague and indiſcriminate acceptation: and indeed ſailors themſelves, ſubmitting occaſionally to the influence of cuſtom, receive it according to this general idea. In the ſea-language, however, it is more particularly applied to a veſſel furniſhed with three maſts, each of which is compoſed of a lower maſt, top-maſt, and top-gallant-maſt, with the uſual machinery thereto belonging.

The deſign of this work being profeſſedly to treat of the conſtruction, mechaniſm, furniture, movements, and military operations of a ſhip, we may properly conſider the preſent article as a general recapitulation of the whole ſubject.

The plans, elevations, and ſections uſed in the conſtruction of a ſhip; the principal pieces of which ſhe is compoſed; and the qualities requiſite to anſwer the ſeveral purpoſes of navigation, are deſcribed, or referred to, in *Naval* ARCHITECTURE: and the application of this theory to practice is treated in the article *Ship*-BUILDING.

The machinery and furniture with which ſhe is equipped are variouſly diffuſed throughout this work, and naturally ſpring from one another, like a multitude of branches from one general trunk. See MAST, SAIL, YARD, RIGGING, ANCHOR, &c.

The qualities by which ſhe is enabled to encounter a tempeſtuous ſea are treated in the article BALLAST and TRIM; and her ſeveral movements therein are explained under NAVIGATION, DRIFT, SAILING, TACKING, LEEWAY, PITCHING, and ROLLING.

Conſidered as a moveable fortreſs or citadel, her military operations are copiouſly deſcribed in CANNON, CANNONADE, ENGAGEMENT, LINE, and RANGE; and as her efforts are occaſionally like thoſe of a mine, or bombardment, the reader is alſo referred to the articles FIRE-SHIP and MORTAR.

The veſſels which are uſually comprehended under the general name of ſhip, beſides thoſe of the line of battle, are galleons, frigates, hag-boats, cats, barks, pinks, and fly-boats; all of which are defined in their proper places, except the hag-boat, that only differs from a frigate-built ſhip in the figure of the ſtern, which has a great reſemblance to that of the *cat*, as being in a middle degree between the former and the latter. See alſo the article QUARTER.

Ships of war are properly equipped with artillery, ammunition, and all the neceſſary martial weapons and inſtruments for attack or defence. They are diſtinguiſhed from each other by their ſeveral ranks or claſſes. See RATE.

SHIP *of the line* is uſually applied to all men of war mounting ſixty guns and upwards. Of late, however, our fifty-gun ſhips have been formed ſufficiently ſtrong to carry the ſame metal as thoſe of ſixty, and accordingly may fall into the line in caſes of neceſſity. See LINE.

The ſhips of ſeventy-four cannon, and thereabouts, are generally eſteemed the moſt uſeful in the line of battle, and indeed in almoſt every other purpoſe of war. It has therefore been judged conformable to our deſign, to repreſent different views and ſections of a ſhip of this claſs. Thus plate IV. exhibits the head, together with the *bow* or fore-part. Plate VII. ſhews a tranſverſe ſection through the broadeſt part, with the profile of her upper and lower deck batteries. Plate III. contains an horizontal ſection at the lower deck, together with the plan of the battery planted on one ſide thereof, and all the pieces by which the deck is ſupported on the other. The quarter, and all the after-part of the ſhip, is exhibited in plate VIII. and the elevation of the ſtern in plate X. all of which are on the ſame ſcale, *viz.* one fourth of an inch to a foot, except the deck, which is one eighth of an inch to a foot.

We have alſo, on a ſmaller ſcale, expreſſed an elevation or ſide-view of a ſixty-gun ſhip, in plate I. with the head thereof in plate IV. fig. 11. and the ſtern in plate X. fig. 2. both of which are viewed upon a line on the continuation of the keel.

Armed-Ship. See Armed Ship.

Hoſpital-Ship, a veſſel fitted up to attend on a fleet of men of war, and receive their ſick or wounded; for which purpoſe her decks ſhould be high, and her ports ſufficiently large. The gun-deck is entirely appropriated for the reception of the ſick, and is ſluſh without cabins or bulk-heads; except one of deal, or canvas, for ſeparating thoſe in malignant diſtempers. Two pair of checquered linen ſheets are allowed to each bed, and ſcuttles cut in the ſides for inlets of air. The ſick are viſited by a phyſician, and conſtantly attended by a ſurgeon, a proportionable number of mates, aſſiſtants, ſervant to him, a baker and waſherwomen. Her cables ought alſo to run upon the upper deck, to the end that the beds or cradles may be more commodiouſly placed between decks, and admit a free paſſage of the air, to diſperſe that which is offenſive or corrupted.

Leeward-Ship. See Leeward.

Merchant-Ship, a veſſel employed in commerce, to carry commodities of various ſorts from one port to another.

The largeſt merchant ſhips are thoſe employed by the different European companies of merchants who trade to the Eaſt-Indies. They are in general ſomewhat larger than our forty-gun ſhips: they are mounted with twenty cannon on their upper-deck, which are nine pounders, and ſix on their quarter-deck, which are ſix pounders. Plate IX. fig. 5. repreſents a view of one of theſe veſſels on the larboard bow, where *a* is the enſign-ſtaff, A the mizen-maſt, B the main-maſt, C the fore-maſt, K the *poop*, L L an awning of wood extending acroſs the after part of the quarter-deck, M poop-ladder, N O ſteps of the gangway, P head of the capſtern on the quarter-deck, Q R the ſkeeds on the gangway, *r* the belfry on the forecaſtle, *ſ* the timber-heads, *y* the cut-water, with a lion-head fixed upon it. The other parts of this ſhip repreſented in the figure are referred to from the explanations of the head, plate IV. and the quarter in plate VIII.

Fig. 6. plate IX. exhibits a quarter view of a foreign-built Eaſt-Indiaman, with a *ſquare tuck*, or perpendicular counter, and having three poop-lanthorns fixed on her *taffarel*.

Private Ship *of war*. See Privateer.

Store-Ship, a veſſel employed to carry artillery or naval ſtores for the uſe of a fleet, fortreſs, or garriſon.

Tranſport-Ship is generally uſed to conduct troops from one place to another.

In the different kinds of ſhips, referred to above, and diſtinguiſhed from each other by their ſize or figure, we have only conſidered thoſe which are moſt common in European nations, where the marine art has received the greateſt improvements. So far is apparently conſiſtent with the views of utility. To give a circumſtantial account of the various ſpecies of ſhips employed in different nations, beſides being an almoſt endleſs taſk, would be of little ſervice, except to gratify an uſeleſs curioſity. See Vessel.

To Ship, is either uſed actively, as to embark any perſon, or put any thing aboard-ſhip; or paſſively, to receive any thing into a ſhip; as, we ſhipped a heavy ſea at three o'clock in the morning.

To SHIP, alſo implies to fix any thing in it's place; as, to ſhip the oars, *i. e.* to fix them in their row-locks. To ſhip the ſwivel-guns, is to fix them in their ſockets, &c.

SHIP-SHAPE, according to the faſhion of a ſhip, or in the manner of an expert ſailor; as, the maſt is not rigged ſhip-ſhape; trim your ſails ſhip-ſhape.

SHIPPING, a multitude of veſſels. The harbour is crowded with ſhipping.

SHIVERING, the ſtate of a ſail when it ſhakes or flutters in the wind, as being neither *full* nor *aback*, but in a middle degree between both, as well with regard to it's abſolute poſition, as to it's relative effect on the veſſel.

SHOAL, (*bas-fond*, Fr.) a term ſynonymous with *ſhallow*. See that article.

SHOE *of the anchor*, (*ſoulier*, Fr.) a ſmall block of wood, convex on the back, and having a ſmall hole, ſufficient to contain the point of the anchor-fluke, on the fore-ſide. It is uſed to prevent the anchor from tearing or wounding the planks on the ſhip's *bow*, when aſcending or deſcending; for which purpoſe the ſhoe ſlides up and down along the bow, between the fluke of the anchor and the planks, as being preſs'd cloſe to the latter by the weight of the former.

To SHOE *an anchor*, (*brider*, Fr.) is to cover the flukes with a broad triangular piece of plank, whoſe area, or ſuperficies, is much larger than that of the flukes. It is intended to give the anchor a ſtronger and ſurer hold of the bottom in very ſoft and oozy ground.

SHORE, (*bord de la mer*, Fr.) a general name for the ſea-coaſt of any country.

BOLD-SHORE, (*berge*, Fr.) on which is depth of water ſufficient for a ſhip's draught, and free from ſhoals, or ſunken rocks.

SHORE, (*accords*, Fr.) is alſo a prop or large *ſtanchion* fixed under a ſhip's ſides or bottom, to ſupport her when laid aground or on the ſtocks, &c.

Bold SHORE, a coaſt which is ſteep and abrupt, ſo as to admit the cloſeſt approach of ſhipping without expoſing them to the danger of being ſtranded.

To SHORTEN, expreſſed of a ſhip's ſails, is uſed in oppoſition to *make*. See that article, as alſo SAIL.

SHOT, a miſſive weapon, diſcharged by the force of enflamed powder from a fire-arm in battle.

The ſhot uſed in the ſea-ſervice is of various kinds, as bullets, bar-ſhot, chain-ſhot, caſe-ſhot, and grape-ſhot; all of which are uſed in the royal navy. There is beſides other ſhot, of a more pernicious kind, uſed by privateers, and other piratical rovers; ſuch are *langrage*, ſtar-ſhot, fire-arrows, &c.

The firſt and moſt ſimple is the round-ſhot, which is a ball or globe of iron, whoſe weight is in proportion to the ſize of the cannon, or to the diameter of it's bore.

The double-headed, or bar-ſhot, fig. 11. plate VII. are balls cut into two equal parts, and joined together by a kind of iron bar. In the French ſervice the middle is ſometimes filled with a compoſition, and the whole covered with linen dipped in brimſtone; the cannon in firing alſo inflames the combuſtibles or compoſition of this ball, which ſets fire to the ſails of

the veſſel. One of the heads of this ball has an hole to receive a fuſe, which, communicating with the charge of the cannon, ſets fire to the bullet*.

The chain-ſhot, fig. 12. conſiſts of two balls chained together, being principally deſigned to deſtroy the maſts and rigging, which they are better fitted to perform than the ſingle bullets.

Grape-ſhot is a combination of balls, fig. 13. put into a thick canvas-bag, and corded ſtrongly together, ſo as to form a ſort of cylinder, whoſe diameter is equal to that of the ball which is adapted to the cannon. This ſhot is repreſented by fig. 13. on a larger ſcale, at the bottom of the plate.

Caſe-ſhot, fig. 14. is formed by putting a great quantity of muſket-bullets into a cylindrical tin-box called a caniſter. They are principally uſed by the French to ſcour the decks of the enemy.

Diameter of IRON SHOT uſed in the Sea-ſervice, according to their weight.

Wt.	Diamet.	
lb.	Inch.	Parts.
1½	2	20
3	2	77
4	3	5
6	3	49
9	4	00
12	4	40
18	5	4
24	5	50
32	6	60
42	6	68

Conſtruction of Grape-ſhot uſed in the Sea-ſervice.

Pounders.	Thickneſs of Bottoms.		Spindles. Length.		Spindles. Diamet.		Weight. Shot.		Weight. Bottom	
	Inch.	Parts.	Inch.	Parts.	Inch.	Parts.	lb.	oz.	lb.	oz.
42	0	60	9	16	0	57	4	0	7	0
32	0	55	8	32	0	55	3	0	5	4
24	0	48	7	27	0	70	2	0	4	0
18	0	44	6	61	0	64	1	8	3	0
12	0	38	5	77	0	55	1	0	2	0
9	0	36	5	38	0	41	0	38	1	8
6	0	30	4	58	0	44	0	8	1	0
4	0	27	4	16	0	27	0	6	0	10½
3	0	22	3	63	0	35	0	4	0	8
1½	0	19	2	88	0	27	0	2	0	4
1	0	17	2	62	0	17	0	0½	0	3
0½	0	14	2	25	0	12	0	0¾	0	2

Pounders.	Canvas for Bags. Length. Inches.	Breadth Inches.	Width made.	Cord. Length. Feet.	Inch.	Circum. Inches.	Weight finiſhed. lb.	oz.
42	16	20 5	9	8	10	0	1	0	43	0
32	15	19	9	0	8	10	1	0	32	4
24	14	17 5	8	3	7	4	0	8	22	8
18	12	16 5	7	8	6	6	0	8	16	8
12	11	14 5	6	8	5	8	0	5	11	0
9	10½	12 75	6	0	5	1	0	5	8	13
6	9	11 5	5	3	4	8	0	4	5	8
4	7 75	10	4	6	3	10	0	4	4	0
3	7	9 5	4	3	3	9	0	4	2	12
1½	6	7 5	3	4	3	5	0	3	1	6
1	5	6 75	3	0	3	0	0	3	1	0
1½	4 5	5 25	2	3	2	3	Packthread		0	8¾

Lead.

* Le Blond's Elements of War.

Fire-

Fire-arrows are deſcribed in the notes under the article ENGAGEMENT, and *Langrage* under that word.

Star-ſhot conſiſts of four pieces of iron, whoſe baſes, when ſeparate, form the quadrant of a circle; ſo that the whole, being joined, forms a cylinder equal to the ſhot of the cannon. Each of thoſe pieces is furniſhed with an iron bar, the extremity of which is attached to a ſort of link, as keys are ſtrung upon a ring. Being diſcharged from the gun, the four branches or arms extend every way from the link in the center. Theſe alſo are chiefly intended to deſtroy the ſails or rigging, but their flight and execution is very precarious at any tolerable diſtance.

SHROUDS, (*haubans*, Fr. *ſcrud*, Sax.) a range of large ropes extended from the maſt-heads to the right and left ſide of the ſhip, to ſupport the maſts, and enable them to carry ſail, &c.

The ſhrouds are always divided into pairs or couples: that is to ſay, one piece of rope is doubled, fig. 7. plate IX. and the two parts faſtened together at a ſmall diſtance from the middle *c*, ſo as to leave a ſort of nooſe or collar *a b* to fix upon the maſt-head. This collar being fixed in it's place, viz. cloſe down upon the *treſtle-trees k*, fig. 2. plate VI. a pair of ſhrouds depend fron ir, whoſe lower ends ought to reach down to the deck. The lower ends of theſe ſhrouds are *ſet up* or extended to the *channel* I. fig. 2. plate VI. on the outſide of the ſhip, by the application of mechanical powers, as explained in the articles *dead-eye* and *lanyard*.

The ſhrouds as well as the ſails are denominated from the maſts to which they belong. Thus they are the main, fore, and mizen ſhrouds, the main top-maſt, fore-top-maſt, or mizen top-maſt ſhrouds, and the main top-gallant, fore top-gallant, or mizen top-gallant ſhrouds.

The number of ſhrouds by which a maſt is ſuſtained, as well as the ſize of rope of which they are formed, is always in proportion to the ſize of the maſt, and the weight of ſail it is intended to carry.

The two foremoſt ſhrouds on the ſtarboard and larboard ſide of the ſhip are always fitted firſt upon the maſt-head; and then the ſecond on the ſtarboard and the ſecond on the larboard, and ſo on till the whole number is fixed. The intention of this arrangement is to *brace* the *yards* with greater facility when the ſails are cloſe-hauled, which could not be performed without great difficulty if the foremoſt ſhrouds were laſt fitted on the maſt-head, becauſe the angle which they would make with the maſt would then be greatly increaſed. See alſo SWIFTER.

The topmaſt-ſhrouds are extended from the topmaſt heads to the edges of the tops, as expreſſed by fig. 3. pl. VI. and fig. 1. pl. IX. The lower dead-eye *q*, employed for this purpoſe, is fitted with an iron band, called the foot-hook-plate, which paſſes thro' a hole in the edge of the top, and communicates with a rope called the foot-hook ſhroud, whoſe lower end is attached to the ſhrouds of the lower maſt, in the ſtation *l*. The upper ends of the foot-hook ſhrouds are furniſhed with an iron hook *n*, which enters a hole in the lower end of the foot-hook plate, ſo that when the top maſt ſhrouds are extended to ſecure the maſt, the foot-hook ſhrouds neceſſarily

acquire an equal tenſion by means of the foot-hook plate, which, paſſing through the top, tranſmits the effort of the mechanical powers to the foot-hook ſhrouds below.

The ſhrouds of the top-gallant maſts are extended to the croſs-trees, as repreſented by *m*, fig. 1. plate IX. See alſo fig. 5. plate VI.

SIDE, (*coté*, Fr.) a name given to the flanks of a ſhip, or in general to all that part which is preſented to the view between the *ſtem* and *ſtern*, in a direction nearly perpendicular to the horizon.

The figure of the ſide is formed by that of the timbers upon which it is conſtructed. It is covered with planks, extending from one end of the ſhip to the other; it is alſo reinforced in different places by *beams*, *clamps*, *knees*, *riders*, and *ſtandards*. See thoſe articles.

The ſide is terminated above by the gunnel, and below by the lower edge of the main wale, which ſeparates it from the bottom: it is incloſed by the ſtern abaft, and by the bow forward.

SIGNALS, (*ſignal*, Fr.) certain alarms or notices uſed to communicate intelligence to a diſtant object at ſea.

Signals are made by firing artillery, and diſplaying colours, lanthorns, or fire-works: and theſe are combined by multiplication and repetition. Thus, like the words of a language, they become arbitrary expreſſions, to which we have previouſly annexed particular ideas: and hence they are the general ſources of intelligence throughout a naval armament, &c. See ADMIRAL and ENGAGEMENT.

Signals ought to be diſtinct, with ſimplicity. They are ſimple, when every inſtruction is expreſſed by a particular token, in order to avoid any miſtakes ariſing from the double purport of one ſignal. They are diſtinct, when iſſued without precipitation; when ſufficient time is allowed to obſerve and obey them; and when they are expoſed in a conſpicuous place, ſo as to be readily perceived at a diſtance.

All ſignals may be reduced into three different kinds, *viz.* Thoſe which are made by the ſound of particular inſtruments, as the trumpet, horn, or fife; to which may be added, ſtriking the bell, or beating the drum. Thoſe which are made by diſplaying *pendents*, *enſigns*, and *flags* of different colours; or by lowering or altering the poſition of the ſails: And, finally, thoſe which are executed by rockets of different kinds; by firing cannon, or ſmall arms; by artificial fire-works; and by lanthorns.

Firing of great guns will ſerve equally in the day or night, or in a fog; to make or confirm ſignals; or to raiſe the attention of the hearers to a future order. This method, however, is attended with ſome inconveniencies, and ſhould not be uſed indiſcriminately. Too great a repetition of the cannon is apt to introduce miſtakes and confuſion, as well as to diſcover the track of the ſquadron. The report and flight of the rockets is liable to the ſame objection, when at a ſhort diſtance from the enemy.

It is then, by the combination of ſignals, previouſly known, that the admiral conveys orders to his fleet; every *ſquadron*, every *diviſion*, and every ſhip of which has it's particular ſignal. The inſtruction may therefore occaſionally

ſionally be given to the whole fleet, or to any of it's ſquadrons; to any diviſion of thoſe ſquadrons, or to any ſhip of thoſe diviſions.

Hence the ſignal of command may at the ſame time be diſplayed for three diviſions, and for three ſhips of each diviſion; or for three ſhips in each ſquadron, and for only nine ſhips in the whole fleet. For, the general ſignal of the fleet being ſhewn, if a particular pendent be alſo thrown out from ſome remarkable place on the ſame maſt with the general ſignal, it will communicate intelligence to nine ſhips that wear the ſame pendent.

The preparatory ſignal given by the admiral to the whole, or any part of his fleet, is immediately anſwered by thoſe to whom it is directed; by ſhewing the ſame ſignal, to teſtify that they are ready to put his orders in execution. Having obſerved their anſwer, he will ſhew the ſignal which is to direct their operations: as,

To chaſe, to form the *line*, to begin the engagement, to board, to double upon the enemy, to rally or return to action, to diſcontinue the fight, to retreat and ſave themſelves. The dexterity of *working* the ſhips in a fleet depends on the preciſe moment of executing theſe orders; and on the general harmony of their movements: a circumſtance which evinces the utility of a ſignal of preparation.

As the extent of the line of battle, and the fire and ſmoke of the action, or other circumſtances in navigation, will frequently prevent the admiral's ſignals from being ſeen throughout the fleet, they are always repeated by the officers next in command; by ſhips appointed to repeat ſignals; and, finally, by the ſhip or ſhips for which they are intended.

The ſhips that repeat the ſignals, beſides the chiefs of ſquadrons or diviſions, are uſually frigates lying to windward or to *leeward* of the line. They ſhould be extremely vigilant to obſerve and repeat the ſignals, whether they are to tranſmit the orders of the commander in chief, or his ſeconds, to any part of the fleet; or to report the fortunate or diſtreſsful ſituation of any part thereof. By this means all the ſhips from the van to the rear will, unleſs diſabled, be ready at a moment's warning to put the admiral's deſigns in execution.

To preſerve order in the repetition of ſignals, and to favour their communication, without embaraſſment, from the commander in chief, to the ſhip for which they are calculated, the commanders of the ſquadrons repeat after the admiral; the chiefs of the diviſions, according to their order in the line, after the commanders of the ſquadrons; and the particular ſhips after the chiefs of the diviſions; and thoſe in return, after the particular ſhips, *vice verſa*, when the object is to convey any intelligence from the latter to the admiral.

Beſides the ſignals above mentioned, there are others for different ranks of officers; as for captains, lieutenants, maſters, *&c.* or for any of thoſe officers of a peculiar ſhip. See DIVISION and SQUADRON.

SKEET, a ſort of long ſcoop commonly uſed to wet the decks and ſides of a ſhip in hot weather, in order to keep them cool, and to prevent them from ſplitting by the heat of the ſun. This practice is accordingly performed in general every morning and evening before ſun-riſe and after ſun-ſet.

This

This inſtrument, fig. 8. plate IX. is alſo employed in ſmall veſſels to wet the ſails, to render them more ſteady and efficacious in light breezes.

SKIDS, or SKEEDS, are long compaſſing pieces of timber, formed ſo as to anſwer the vertical curve of a ſhip's ſide. See Q, R, fig. 5. plate IX. They are notched below ſo as to fit cloſely upon the wales; and as they are intended to preſerve the planks of the ſide, when any weighty body is hoiſted or lowered, they extend from the main wale to the top of the ſide; and they are retained in this poſition by bolts or ſpike-nails.

SKIFF, (*eſquife*, *nacelle*, Fr. *ſcaffa*, Lat.) a ſmall boat reſembling a yawl, alſo a wherry without maſts or ſails, uſually employed to paſs a river. See the article BOAT.

SLAB-LINE, (*cargue à vue*, Fr.) a ſmall cord paſſing up behind a ſhip's main-ſail or fore-ſail, and being *reeved* through a block, fig. 1. plate IX. attached to the lower part of the yard, is thence tranſmitted in two branches to the foot of the ſail, to which it is faſtened. It is uſed to truſs up the ſail as occaſion requires; but more particularly for the conveniency of the pilot or ſteerſman, that they may look forward beneath it, as the ſhip advances.

SLACK-WATER, the interval between the flux and reflux of the tide; or between the laſt of the ebb and the firſt of the flood, during which the current is interrupted; and the water apparently remains in a ſtate of reſt.

SLATCH, is generally applied to the period of a tranſitory breeze of wind, or the length of it's duration.

SLEEPERS, a name formerly given by ſhipwrights to the *thick-ſtuff* placed longitudinally in a ſhip's hold, oppoſite to the ſeveral *ſcarfs* of the timbers. It is now properly applied to the knees, which connect the *tranſoms* to the after-timbers on the ſhip's *quarter*.

SLINGS, (*elingue*, Fr. *ſlingan*, Sax.) a rope whoſe ends are fixed in ſuch a manner to it's other part, as to encircle a caſk, bale, or caſe, and ſuſpend it whilſt hoiſting or lowering. Of theſe there are various ſorts, according to the weight or figure of the object to which they are applied. Thoſe which are moſt frequently uſed in lading and delivering ſhips are repreſented in fig. 9. plate IX. being nearly in the form of a pair of ſpectacles, the *tackle* being hooked to the middle part *a*, whilſt *b* and *c* are fixed on the oppoſite quarters of the caſk, &c.

SLIP, a place lying with a gradual deſcent on the banks of a river convenient for ſhip-building.

SLOOP, a ſmall veſſel furniſhed with one maſt, the main-ſail of which is attached to a *gaff* above, to the maſt on it's foremoſt edge, and to a long boom below; by which it is occaſionally ſhifted to either quarter. See VESSEL.

SLOOP OF WAR, a name given to the ſmalleſt veſſels of war, except cutters. They are either rigged as ſhips or as ſnows. See COMMAND, HORSE, and RATE.

To SLUE, is to turn any cylindrical or conical piece of timber about it's axis, without removing it. This term is generally expreſſed of the movement by which a maſt or boom is turned about, in it's *cap* or *boom-iron*.

SMACK, a ſmall veſſel commonly rigged as a *ſloop* or *hoy*, uſed in the coaſting or fiſhing trade; or as a *tender* in the King's ſervice.

SNATCH-

SNATCH-BLOCK, *(galoche*, Fr.) a block having an opening in one of it's ſides, wherein to fix the *bight* of rope occaſionally. See BLOCK.

SNOTTER. See the article SPRIT.

SNOW, *(ſenau*, Fr.) is generally the largeſt of all two-maſted veſſels employed by Europeans, and the moſt convenient for navigation.

The ſails and rigging on the main-maſt and fore-maſt of a ſnow, are exactly ſimilar to thoſe on the ſame maſts in a ſhip; only that there is a ſmall maſt behind the main-maſt of the former, which carries a ſail nearly reſembling the *mizen* of a ſhip. The foot of this maſt is fixed in a block of wood on the quarter-deck abaft the main-maſt; and the head of it is attached to the after-part of the main-*top*. The ſail, which is called the try-ſail, is extended from it's maſt towards the ſtern of the veſſel.

When the *ſloops* of war are rigged as ſnows, they are furniſhed with a *horſe*, which anſwers the purpoſe of the try-ſail-maſt, the fore-part of the ſail being attached by rings to the ſaid horſe, in different parts of it's heighth.

SOLE, a name ſometimes given to the lower ſide of a gun-port, which however is more properly called the port-ſell.

SOUNDING, *(ſonder*, Fr.) the operation of trying the depth of the water, and the quality of the ground, by means of a plummet, *(plomb de ſonde*, Fr.) ſunk from a ſhip to the bottom.

There are two plummets uſed for this purpoſe in navigation; one of which is called the hand-lead, weighing about 8 or 9 pounds; and the other the deep-ſea-lead, which weighs from 25 to 30 pounds, and both are ſhaped like the fruſtum of a cone or pyramid. The former is uſed in ſhallow waters, and the latter at a great diſtance from the ſhore; particularly on approaching the land, after a ſea-voyage. Accordingly the lines employed for this purpoſe are called the deep-ſea-lead-line, and the hand-lead-line.

The hand-lead-line, which is uſually 20 fathoms in length, is marked at every 2 or 3 fathoms; ſo that the depth of the water may be aſcertained either in the day or night. At the depth of 2 and 3 fathoms, there are marks of black leather; at 5 fathom, there is a white rag; at 7, a red rag; at 10, black leather; at 13, black leather; at 15, a white rag; and at 17, a red ditto.

Sounding with the hand-lead, which is called heaving the lead by ſeamen, is generally performed by a man who ſtands in the main-*chains* to windward. Having the line all ready to run out, without interruption, he holds it nearly at the diſtance of a fathom from the plummet, and having ſwung the latter backwards and forwards three or four times, in order to acquire the greater velocity, he ſwings it round his head, and thence, as far forward as is neceſſary; ſo that, by the lead's ſinking whilſt the ſhip advances, the line may be almoſt perpendicular when it reaches the bottom. The perſon ſounding then proclaims the depth of the water in a kind of ſong reſembling the cries of hawkers in a city. Thus, if the mark of 5 fathoms is cloſe to the ſurface of the water, he calls 'By the mark five!' and as there is no mark at 4, 6, 8, &c. he eſtimates thoſe numbers, and calls, 'By the dip four,' &c. If he judges it to be a quarter, or an half more than any particular number,

he

he calls, 'And a quarter five! and a half four,' &c. If he conceives the depth to be 3 quarters more than a particular number, he calls it a quarter leſs than the next: thus, at four fathom and ¾, he calls 'A quarter leſs five!' and ſo on.

The deep-ſea-lead is marked with two knots at 20 fathom, 3 at 30, 4 at 40, and ſo on to the end. It is alſo marked with a ſingle knot in the middle of each interval, as at 25, 35, 45 fathoms, &c. To uſe this lead more effectually at ſea, or in deep water on the ſea-coaſt, it is uſual previouſly to *bring to* the ſhip, in order to retard her courſe: the lead is then thrown as far as poſſible from the ſhip on the line of her drift, ſo that, as it ſinks, the ſhip drives more perpendicularly over it. The pilot, feeling the lead ſtrike the bottom, readily diſcovers the depth of the water by the mark on the line neareſt it's ſurface. The bottom of the lead being alſo well rubbed over with tallow, retains the diſtinguiſhing marks of the bottom, as ſhells, ooze, gravel, &c. which naturally adhere to it.

The depth of the water, and the nature of the ground, which is called the ſoundings, are carefully marked in the log-book, as well to determine the diſtance of the place from the ſhore, as to correct the obſervations of former pilots. See COASTING and NAVIGATION.

SPAN, *(pendour*, Fr. *ſpanna*, Ital.) a ſmall line or cord, the middle of which is uſually attached to a ſtay, from whence the two ends branch outwards to the right and left, and having either a *block* or *thimble* attached to their extremities. The intention of the ſpan is accordingly to confine ſome rope which paſſes through the correſponding block or thimble, as well to increaſe the effort of the ſaid rope, as to prevent it from ſwinging at too great a diſtance from the center of it's action in ſtormy weather. Such are the ſpans occaſionally uſed for the top-gallant *braces*, or the fore-top-gallant *bowlines*, &c.

SPAN-SHACKLE. See the article DAVIT.

SPARE, *(rechange*, Fr.) an epithet applied to any part of a ſhip's equipage, or furniture, that lies in reſerve, to ſupply the place of ſuch as may be loſt, or rendered incapable of ſervice. Hence we ſay, ſpare top-maſts, ſpare ſails, ſpare rigging, &c.

PUMP-SPEAR. See the article PUMP.

SPELL, the period wherein a ſailor, or gang of ſailors, is employed in a particular exerciſe, from which they are relieved as ſoon as the limited time expires. Such are the ſpells, to the hand-lead in ſounding; to the pump; to look out on the maſt-head, &c. and to ſteer the ſhip; which laſt, however, is generally called the *trick*. See STEERING.

SPELL alſo implies the relief, or the return of duty to thoſe ſervices: Thus we ſay, ſpell the pump, ſpell the lead, &c.

To SPILL, to diſcharge the wind out of the cavity or belly of a ſail when it is drawn up in the brails in order to *furl* or *reef* it. This is either performed by collecting the ſail together, or by bracing it's edge to the wind, ſo as to ſhiver or be laid aback.

SPILLING-LINES, certain ropes fixed occaſionally to the main-ſail and fore-ſail of a ſhip, in tempeſtuous weather, for reefing or furling them

more conveniently. They are paſſed through blocks above the yard, and thence leading down before the ſail, come under it's bottom, and return upwards behind it to the yard, where they are faſtened, ſo that the ſail, by their effort, is cloſely and immoveably confined to the yard.

SPINDLE, (*baton de girouëtte*, Fr.) a ſort of iron-pin tapering at the upper end to the point. It is uſed to ſtick into the upper end of the top-gallant-maſt, ſo as to carry a vane, which, turning thereon horizontally, will ſhow the direction of the wind. It is uſually crowned with a globular or conical piece of wood called the acorn, which prevents the vane from being blown off. See ACORN.

SPINDLE is alſo the lower end or foot of the capſtern, which is ſhod with iron, and becomes the pivot or axis upon which it turns in the ſaucer. See the article CAPSTERN.

SPIRKETING, that range of planks which lies between the water-ways and the lower edge of the gun-ports within the ſide of a ſhip of war.

To SPLICE, (*epiſſer*, Fr. *ſplitſer*, Dutch, *plico* Lat.) to join the two ends of a rope together, or to unite the end of a rope to any other part thereof.

There are ſeveral different methods of performing this operation, according to the ſervices on which it is to be employed. Thus, there is the ſhort-ſplice, the long-ſplice, the eye-ſplice, and the cunt-ſplice; all of which are calculated for different purpoſes.

The ſhort-ſplice is made by untwiſting the ends of two ropes, or the two ends of one rope, and, having placed each of the *ſtrands* of one oppoſite to and in the interval between two *ſtrands* of the other, to draw them cloſe together; and then interweave the ſtrands of one into the alternate ſtrands of the other, by penetrating the latter with a *fid* or marline-ſpike, parallel to the axis or length of the rope. This ſplice is uſed on the cables, ſlings, block-ſtrops, and in general all ropes which are not intended to run through blocks, or where the ſplice is not in danger of being looſened or ſeparated.

The long ſplice, being fixed in three places, occupies a greater extent of the rope; but, by the diviſion of the joinings, the bulk is alſo divided into different parts of it's length. Hence it is much neater and ſmoother than the ſhort-ſplice, and better adapted to run through the channel of a block, &c. for which uſe it is generally calculated.

The eye-ſplice being intended to make a ſort of eye or circle at the end of a rope, the ſtrands are untwiſted, and their extremities thruſt through the three ſtrands in that part of the ſaid rope, whereon the ſplice is to be formed, and thence paſſing over the ſurface of the ſecond ſtrand, they are again thruſt through the third, which completes the operation.

The cunt-ſplice is conſtructed in the ſame manner as the eye-ſplice, being no other than the ends of two lines faſtened together at a ſhort diſtance from each other, the extremities of either being interwoven into the *bight* of the other, ſo that the line becomes double in the extent of the ſplice. This is chiefly uſed in lead-lines, log-lines, and fiſhing-lines, where the ſhort-ſplice would be liable to ſeparation, as being frequently looſened by the water.

SPLIT, the ſtate of a ſail which is rent aſunder by the violence of a tempeſt, or by ſuſtaining a greater effort on one part of it's ſurface than the reſt.

SPLIT, when applied to a ſhip, is alſo the ſtate of being ſtranded and bilged on a rock or ſhore.

SPOON-DRIFT, a ſort of ſhowery ſprinkling of the ſea-water, ſwept from the ſurface of the waves in a tempeſt, and flying according to the direction of the wind like a vapour.

SPOONING. By the explanation of this term in our dictionaries, it ſeems formerly to have ſignified that movement in navigation, which is now called ſcudding. Be that as it may, there is at preſent no ſuch phraſe in our ſea-language.

SPRAY, the ſprinkling of the ſea, which is driven from the top of a wave in ſtormy weather. It differs from ſpoon-drift, as being only blown occaſionally from the broken ſurface of a high wave, whereas the latter continues to fly horizontally along the ſea, without intermiſſion, during the exceſs of a tempeſt or hurricane.

SPRING, a crack or breach running tranſverſely or obliquely through any part of a maſt or yard, ſo as to render it unſafe to carry the uſual quantity of ſail thereon.

SPRING is alſo a rope paſſed out of one extremity of a ſhip and attached to a cable proceeding from the other, when ſhe lies at anchor. It is uſually performed to bring the ſhip's broad-ſide, or battery of cannon, to bear upon ſome diſtant object; as another ſhip, or a fortreſs on the coaſt, &c. When a ſhip rides by anchors which are only carried out of one end, ſhe will ſwing upon the ſurface of the water like a weather-cock, according to the direction of the wind; unleſs when the wind is oppoſed by a current. Now, if inſtead of being faſtened at one end, ſhe is attached by ropes, which, proceeding from her head and ſtern towards the ſame ſource, ſuſtain an equal effort of the wind, it is evident that her ſide will be preſented to the wind; and that, by ſlackening one of thoſe ropes, and keeping faſt the other, her ſide will lie more or leſs obliquely to the wind, ſo as to be oppoſed to any diſtant object to the right or left.

Thus, if a ſhip rides with her head northerly, and it is required to cannonade a fortreſs lying on the ſouth, or ſouth-eaſt, a hawſer is run out of the ſtern, and being carried forward, without her ſide, is attached to the cable, at a competent diſtance ahead of the ſhip; the hawſer is then tightened by the *capſtern* or tackles, and the cable being ſlackened, the ſhip immediately turns her ſide towards the object intended to be battered.

SPRING is likewiſe a rope reaching diagonally from the ſtern of a ſhip to the head of another which lies *along-ſide* or abreaſt of her, at a ſhort diſtance. This is generally performed to make one of the ſhips *ſheer* off, to a greater diſtance from the other; or to make merchant-ſhips lie uniformly in the ſame tier. Springs of this ſort are therefore occaſionally applied from a ſhip, to a wharf or key, for the ſame purpoſes.

To SPRING A LEAK. See the article LEAK.

SPRINGING THE LUFF. See LUFF.

SPRING-TIDE, the periodical exceſs of the elevation and depreſſion of the TIDE. See that article.

SPRIT,

SPRIT, (*ſpryttan*, Sax. to branch out) a ſmall boom or pole which croſſes the ſail of a boat diagonally, from the maſt, to the upper hindmoſt corner of the ſail, which it is uſed to extend and elevate: the lower end of the ſprit reſts in a ſort of wreath or collar called the *ſnotter*, which encircles the maſt in that place. Theſe ſort of ſails are accordingly called ſprit-ſails.

SPRITSAIL, (*civadiere*, Fr.) a ſail attached to a yard which hangs under the bowſprit, as repreſented in fig. 2. *y*, plate IX. It is furniſhed with a large hole in each of it's lower corners, to evacuate the water with which the cavity or belly of it is frequently filled, by the ſurge of the ſea, when the ſhip pitches.

SPRITSAIL-TOPSAIL, (*perroquet de beaupre*, Fr.) a ſail extended above the former, by a yard which hangs acroſs the *jib-boom*. The lower corners of this ſail are hauled *home* to the ſpritſail-yard-arms; after which the ſail is drawn out toward the extremity of the boom, in light winds, as any other topſail-yard is hoiſted upon it's maſt.

Formerly the ſpritſail-top-ſails were ſet on a maſt, which was erected perpendicularly on the end of the bowſprit: but this method has of late been juſtly rejected as inconvenient and dangerous to the bowſprit, although ſerviceable in light breezes.

SPUNGE. See the article CANNON.

SPUN-YARN, (*bittord*, Fr.) a ſmall line or cord formed of two or three rope-yarns twiſted together by a winch. The yarns, of which it is uſually made at ſea, are drawn out of the ſtrands of old cables or other ropes, and are knotted together and tarred. It is employed for ſeveral purpoſes; particularly to faſten one rope to another, to ſeize block-ſtrops to the ſhrouds, and to *ſerve* ropes which are liable to be chafed by rubbing one againſt another, &c.

SPURS *of the beams*, (*barrotins d' écoutilles*, Fr.) See the article DECK, and the explanation of the figure annexed thereto.

SQUADRON, (*eſcadre*, Fr. *ſquadrone*, Ital.) either implies a detachment of ſhips employed on any particular expedition, or the third part of a naval armament. See the articles FLAG, CENTER, FLEET, and DIVISION.

SQUALL, (*raffale*, Fr.) a ſudden and violent blaſt of wind, uſually occaſioned by the interruption and reverberation of the wind from high mountains. Theſe are very frequent in the Mediterranean; particularly that part of it which is known by the name of the Levant, as produced by the repulſion, and new direction which the wind meets with in it's paſſage between the various iſlands of the Archipelago.

SQUARE, a term peculiarly appropriated to the yards and their ſails, implying that they hang at right angles with the maſt or keel; or that they are of greater extent than uſual.

Thus, when the yards are ſo balanced by their *lifts*, as to hang at right angles with the maſt, they are ſaid to be ſquare by the lifts: when they hang perpendicular to the ſhip's length, they are called ſquare by the braces: but when they lie in a direction perpendicular to the plane of the keel, they are ſquare by the lifts and braces; or, in other words, they hang directly acroſs the ſhip, and parallel to the horizon.

The yards are ſaid to be very ſquare, when they are of extraordinary length; and the ſame epithet is then applied to their ſails, which by conſequence acquire an additional breadth.

SQUARE-RIGGED, an epithet applied to a ſhip whoſe yards are very long. It is alſo uſed in contradiſtinction to all veſſels whoſe ſails are extended by *ſtays* or *lateen-yards*; or by booms and gaffs; the uſual ſituation of which is nearly in the plane of the keel; and hence,

SQUARE-SAIL, (*treou*, Fr.) is a ſail extended to a yard, which hangs parallel to the horizon, as diſtinguiſhed from the other ſails which are extended by *booms* and ſtays placed obliquely. This ſail is only uſed in fair winds, or to ſcud under in a tempeſt. In the former caſe, it is furniſhed with a large additional part called the bonnet, which is then attached to it's bottom, and removed when it is neceſſary to *ſcud*. See that article.

STAFF, (*baton*, Fr.) a light pole erected in different parts of a ſhip, whereon to hoiſt and diſplay the colours.

The principal of theſe is reared immediately over the ſtern, to diſplay the *enſign*; another is fixed on the bowſprit, to extend the *jack*; three more are erected at the three maſt-heads, or formed by their upper ends, to ſhow the flag or pendent of the reſpective ſquadron or diviſion to which the ſhip is appropriated. See ENSIGN, MAST, JACK, and PENDENT.

STANCHION, (*batayolette*, or *batayolles*, *epontilles*, Fr.) a ſort of ſmall pillar of wood or iron uſed for various purpoſes in a ſhip; as to ſupport the decks, the quarter-rails, the *nettings*, the *awnings*, &c.

The firſt of theſe are two ranges of ſmall columns, fixed under the beams, throughout the ſhip's length *between-decks*; one range being on the ſtarboard, and the other on the larboard ſide of the hatchways. They are chiefly intended to ſupport the weight of the artillery.

STANCHIONS *of the nettings*, are either ſlender bars of iron, whoſe lower ends are fixed in iron ſockets at proper diſtances; or ſquare wooden pillars let into the upper part of the ſhip's ſide. See QUARTER-NETTING.

STANDARD, (*courbe*, Fr.) in ſhip-building, is no other than an inverted knee, which is placed above the deck inſtead of beneath it, and having it's vertical branch pointed upwards from that which lies horizontally. The figure and poſition of one of theſe ſtandards is expreſſed by the curve line *f*, which is dotted through the gun-carriage in the MIDSHIP-FRAME, plate VII. Such alſo are the ſtandards of the bits and channels.

Royal STANDARD, (*etendard royale*, Fr.) a flag in which the imperial enſigns of Great Britain, and the arms of France and Ireland, together with the armorial bearings of Hanover, are united and quartered. It is never hoiſted unleſs when the ſovereign is perſonally aboard; at which time it is diſplayed at the main-top-maſt-head.

STANDING, in navigation, the movement by which a ſhip advances towards a certain object, or departs from it: as the enemy ſtands in-ſhore: the Engliſh fleet are ſtanding *off*: at day-break we diſcovered three ſail ſtanding to the northward, &c.

STANDING-WATER, (*l'eau dormant*, Fr.) water where there is no current or tide.

STARBOARD,

STARBOARD, (*tribord*, Fr.) the right ſide of the ſhip when the eye of the ſpectator is directed forward. See LARBOARD.

STAY, (*etai*, Fr.) a large ſtrong rope employed to ſupport the maſt on the fore part, by extending from it's upper end towards the fore part of the ſhip, as the ſhrouds are extended to the right and left, and behind it. See MAST, RIGGING, and SHROUD.

The ſtay of the fore-maſt *a*, fig. 10. plate IX. which is called the fore-ſtay, reaches from the maſt-head towards the bowſprit-end: the main-ſtay *b*, extends over the fore-caſtle to the ſhip's ſtem; and the mizen-ſtay, *c*, is ſtretched down to that part of the main-maſt which lies immediately above the quarter-deck: the fore-top-maſt-ſtay, *d*, comes alſo to the end of the bowſprit, a little beyond the fore-ſtay: the main-top-maſt-ſtay, *e*, is attached to the head or *hounds* of the fore-maſt; and the mizen top-maſt-ſtay comes alſo to the hounds of the main-maſt: the fore-top-gallant-ſtay comes to the outer end of the jib-boom; and the main-top-gallant-ſtay is extended to the head of the fore-top-maſt.

STAY-SAIL, a ſort of triangular ſail extended upon a ſtay. See SAIL.

STEDDY, the command given by the pilot, &c. to the helmſman, in a *fair* wind, to ſteer the ſhip according to the line on which ſhe advances at that inſtant, without deviating to the right or left. The helmſman accordingly anſwers ſteddy; to ſhew his attention and obedience to the pilot's order.

STEERAGE, an apartment without the great *cabin* of a ſhip, from which it is ſeparated by a thin partition. In large ſhips of war it is uſed as a hall through which it is neceſſary to paſs, to arrive at, or depart from the great cabin. In merchant-ſhips it is generally the habitation of the inferior officers and ſhip's crew. See alſo BIRTH.

STEERAGE is alſo uſed to expreſs the effort of the helm; and hence

STEERAGE-WAY, is that degree of progreſſive motion communicated to a ſhip, by which ſhe becomes ſuſceptible of the effects of the helm to govern her courſe. See HELM and SAILING.

STEERING, (*gouverner*, Fr. *ſteoran*, Sax.) may be defined the art of directing the ſhip's way by the movements of the helm; or of applying it's efforts to regulate her courſe when ſhe advances.

The perfection of ſteering conſiſts in a vigilant attention to the motion of the ſhip's *head*, ſo as to check every deviation from the line of her courſe in the firſt inſtant of it's motion; and in applying as little of the power of the helm as poſſible. By this ſhe will run more uniformly in a ſtraight path, as declining leſs to the right and left: whereas, if a greater effort of the helm is employed, it will produce a greater declination from the courſe, and not only increaſe the difficulty of ſteering, but alſo make a crooked and irregular track through the water. See HELM.

The helmſman ſhould diligently watch the movements of the head by the land, clouds, moon, or ſtars; becauſe although the courſe is in general regulated by the compaſs, yet the vibrations of the needle are not ſo quickly perceived, as the ſallies of the ſhip's head to the right or left, which, if not immediately reſtrained, will acquire additional velocity in every inſtant of their motion, and demand a more powerful impulſe of the helm to reduce them;

the application of which will operate to turn her head as far on the contrary ſide of her courſe.

The phraſes uſed in ſteering a ſhip vary according to the relation of the wind to her courſe. Thus, if the wind is *fair*, or *large*, the phraſes uſed by the pilot, or officer who ſuperintends the ſteerage, are *port*, *ſtarboard*, and *ſteddy*. The firſt is intended to direct the ſhip's courſe further to the right; the ſecond is to guide her further to the left; and the laſt, as explained under that word, is deſigned to keep her exactly in the line, whereon ſhe advances, according to the courſe preſcribed. The exceſs of the firſt and ſecond movement is called hard-a-port, and hard-a-ſtarboard; the former of which gives her the greateſt poſſible inclination to the right, and the latter an equal tendency to the left.

If, on the contrary, the wind is *foul* or *ſcant*, the phraſes are *luff*, *thus*, and *no nearer*; the firſt of which is the order to keep her cloſe to the wind; the ſecond, to retain her in her preſent ſituation; and the third, to keep her ſails full. The effects of theſe movements are further explained under the ſeveral terms; but more particularly under the article FULL AND BY.

In a ſhip of war, the exerciſe of ſteering the ſhip is uſually divided amongſt a number of the moſt expert ſailors, who attend the helm in their turns; and are accordingly called *timoneers*, from the French term *timonier*, which ſignifies helmſman. The ſteerage is conſtantly ſuperviſed by the quarter-maſters, who alſo attend the helm by rotation. In merchant-ſhips every ſeaman takes his turn in this ſervice, being directed therein by the mate of the watch, or ſome other officer.

As the ſafety of a ſhip, and all contained therein, depend, in a great meaſure, on the ſteerage or effects of the helm, the apparatus by which it is managed ſhould often be diligently examined by the proper officers. Indeed, a negligence in this important duty appears almoſt unpardonable, when the fatal effects which may reſult from it are duly conſidered.

STEEVING, the elevation of a ſhip's bowſprit above the ſtem, or the angle which it makes with the horizon.

STEM, (*etrave*, Fr. *ſtammen*, Swed.) a circular piece of timber, into which the two ſides of a ſhip are united at the fore end: the lower end of it is ſcarfed to the *keel*, and the *bowſprit* reſts upon it's upper end.

The ſtem is formed of one or two pieces, according to the ſize of the veſſel; and as it terminates the ſhip forward, the ends of the *wales* and planks of the ſides and bottom are let into a groove or channel, in the middle of it's ſurface, from the top to the bottom: which operation is called *rabbeting*. See that article.

The out ſide of the ſtem is uſually marked with a ſcale, or diviſion of feet, according to it's perpendicular heighth from the keel. The intention of this, is to aſcertain the draught of water at the fore part, when the ſhip is in preparation for a ſea-voyage, &c.

The ſtem at it's lower end is of equal breadth and thickneſs with the keel, but it grows proportionally broader and thicker towards it's upper extremity. See *Naval* ARCHITECTURE and *Ship*-BUILDING.

STEMSON, (*marſouin*, Fr.) an arching piece of timber fixed within the apron to reinforce the ſcarf thereof, in the ſame manner as the apron ſupports the ſcarf of the ſtem. In large ſhips it is uſually formed of two pieces, as repreſented by I. in plate I. PIECES of the HULL.

STEP, (*carlingue*, Fr.) a block of wood fixed on the decks or bottom of a ſhip, and having a hole in it's upper ſide fitted to receive the heel of a maſt or *capſtern*.

The ſteps of the main and fore-maſts of every ſhip reſt upon the kelſon, as appears in fig. 2. and 3. plate VI. to which they are firmly ſecured by *knees*, bolts, or ſpike-nails. The ſtep of the mizen-maſt uſually reſts upon the lower deck. See alſo the article CAPSTERN.

STERN, (*arcaſſe*, Fr. *ſteor*, Sax.) the poſterior face of a ſhip; or that part which is preſented to the view of a ſpectator, placed on the continuation of the keel behind, as exhibited in plate X. fig. 1, 2, and 3; and in plate XI. fig. 1.

The ſtern, as repreſented in plate X. is terminated above by the *taffarel*, and below by the *counters*: It is limited on the ſides by the quarter-pieces; and the intermediate ſpace comprehends the galleries and windows of the different cabins.

EXPLANATION of fig. 3. plate X. which exhibits the Stern of a ſeventy-four gun-ſhip.

A, the keel, with *a* the falſe keel beneath it.

A B, the ſtern-poſt.

C, the rail which determines the heighth of the counters.

D D, the upper and lower quarter-galleries, with their balluſtrades and windows.

E, the quarter-pieces: and P F P, the taffarel.

K G K, the lower counter, with H H, it's gun-ports.

G, the rail which ſeparates the lower counter from the ſecond or upper counter; which laſt is included between G and C.

K K, the wing-tranſom.

L L, the deck-tranſom.

M, N, O, firſt, ſecond, and third tranſoms; the 4th, 5th, and 6th, tranſoms are placed immediately under theſe: and that which lies between the wing and deck-tranſoms, is called the filling-tranſom.

O M L K P, the direction of the faſhion-piece, whoſe upper part is expreſſed by the dotted lines K P.

Q, the cove, a ſort of arched canopy, ſerving as a roof to the ſtern-gallery.

R Q R, the ſcreen bulk-head, or partition, containing the cabin windows.

R S S R, the balluſtrade of the ſtern-gallery, with S S, the foot-pace-rail, which determines the heighth of it's floor, or platform.

S C S, the ward-room windows.

T, the lower finiſhing of the quarter-gallery.

Fig.

Fig. 2. exhibits a ſtern view of a 60 gun-ſhip, with the curve of the *frame-timbers* on one ſide, and the diſpoſition of all the planks of the bottom on the other ſide.

Fig. 3. repreſents a ſtern view of a French man of war of 70 guns.

Plate XI. fig. 1. is a ſtern for a firſt or ſecond rate: accordingly it is furniſhed with a middle apartment between the ward-room and the captain's cabin. This apartment is alſo furniſhed with galleries on the ſtern and quarter. The other parts of it are deſcribed in the explanation of fig. 1. in plate X. See alſo the article QUARTER.

STERN-FAST, a rope uſed to confine the ſtern of a ſhip or boat to any wharf or jetty-head, &c.

STERNMOST, uſually implies that part of a fleet of ſhips which is in the rear, or furtheſt aſtern, as oppoſed to *head-moſt*.

STERN-POST, (*etambot*, Fr.) a long ſtraight piece of timber erected on the extremity of the *keel*, to ſuſtain the rudder, and terminate the ſhip behind.

This piece, which is expreſſed by B in the PIECES *of the* HULL, plate I. ought to be well ſecured and ſupported; becauſe the ends of all the lower planks of the ſhip's bottom are fixed in a channel, cut on it's ſurface; and the whole weight of the rudder is ſuſtained by it.

The dimenſions of the ſtern-poſt, or the proportional breadth and thickneſs, in the different parts of it's height, are geometrically delineated in the *quarter* and ſtern of a 74 gun-ſhip, plate VIII. and X. being expreſſed in both by A B. It is uſually marked like the *ſtem*, with a ſcale of feet from the keel upwards, in order to aſcertain the draught of water, at that part of the veſſel.

The difficulty of procuring a ſtern-poſt of ſufficient breadth in one piece, has introduced the practice of fixing an additional piece behind it, which is ſtrongly bolted to the former. The hinges, which ſupport the rudder, are accordingly fixed to this latter, which is alſo tenanted into the keel, and denominated the back of the *poſt*, being expreſſed by E in the *pieces* of the *hull*, referred to above. It is half the breadth of the ſtern poſt at the heel, but diminiſhes gradually towards the upper end, where it is one third narrower.

The ſtern-poſt is ſtrongly attached to the keel by a knee, G, PIECES of the HULL, of which one branch extends along the keel, being *ſcarfed* and bolted to the *dead-wood*, and fore-locked under the keel; whilſt the other branch inclines upwards, and correſponds with the inſide, or fore part of the ſtern-poſt; to which it is alſo bolted in the ſame manner.

STERN-SHEETS, that part of a boat which is contained between the ſtern and the aftmoſt, or hindmoſt, ſeat of the *rowers*. It is generally furniſhed with benches to accommodate the paſſengers. See the article BOAT.

STERN-WAY, the movement by which a ſhip retreats, or falls backward, with her ſtern foremoſt.

STEWARD, (*maitre-valet*, Fr.) an officer in a ſhip of war, appointed by the purſer, to diſtribute the different ſpecies of proviſions to the officers and crew; for which purpoſe he is furniſhed with a mate and proper aſſiſtants.

STIFF,

STIFF, the quality by which a ſhip is enabled to carry a ſufficient quantity of ſail, without hazard of overſetting. See the articles BALLAST and TRIM.

STINK-POT, (*pot à feu*, Fr.) an earthen jar, or ſhell, charged with powder, grenadoes, and other materials of an offenſive and ſuffocating ſmell. It is frequently uſed by privateers, in the weſtern ocean, in the attack of an enemy, whom he deſigns to board; for which purpoſe it is furniſhed with a lighted fuſe, at the opening or touch-hole. See BOARDING.

STIRRUPS. See the article HORSE.

STOCKS, (*chautiers*, Fr.) a frame erected on the ſhore of a river, or harbour, whereon to build ſhipping. It generally conſiſts of a number of wooden blocks, ranged parallel to each other, at convenient diſtances, and with a gradual declivity towards the water. See LANCHING.

STOPPERS, (*boſſes*, Fr.) certain ſhort pieces of rope, which are uſually *knotted* at one, or both ends, according to the purpoſe for which they are calculated. They are either uſed to ſuſpend any weighty body, or to retain a cable, *ſhroud*, &c. in a fixed poſition.

Thus, the anchors, when firſt hoiſted up from the ground, are hung to the cat-head, by a ſtopper attached to the latter, which, paſſing through the anchor-ring, is afterwards faſtened to the timber head, *n*, fig. 10. plate IV. and the ſame rope ſerves to faſten it on the *bow* at ſea; or to ſuſpend it by the ring, when it is to be ſunk from the ſhip to the bottom.

The ſtoppers of the cables have a large knot, and a *laniard* at one end, and are faſtened to a ring-bolt in the deck, by the other. They are attached to the cable, by the laniard, which is faſtened ſecurely round both by ſeveral turns paſſed behind the knot, or about the neck of the ſtopper; by which means the cable is reſtrained from running out of the ſhip, when ſhe rides at anchor. See alſo BITS and RING-ROPE.

The ſtoppers of the ſhrouds have a knot and a laniard at each end. They are uſed only when the ſhrouds are cut aſunder in battle, or diſabled by tempeſtuous weather; at which time they are *laſhed*, in the ſame manner as thoſe of the cables, to the ſeparated parts of the ſhroud, which are thereby reunited, ſo as to be fit for immediate ſervice. This, however, is only a temporary expedient, applied when there is not time or opportunity to refit them, by a more complete operation.

STORE-KEEPER. (*garde-magaſin*, Fr. an officer in the royal dock-yards, inveſted with the charge of the principal naval ſtores; as the ſails, anchors, cordage, &c.

STORE-ROOM, (*ſoute*, Fr.) an apartment, or place of reſerve, of which there are ſeveral in a ſhip, to contain the proviſions, or ſtores of a ſhip, together with thoſe of her officers, during a ſea-voyage.

STOWAGE, (*arrimage*, Fr.) the general diſpoſition of the ſeveral materials contained in a ſhip's hold, with regard to their figure, magnitude, or ſolidity.

In the ſtowage of different articles, as ballaſt, caſks, caſes, bales, and boxes, there are ſeveral general rules to be obſerved, according to the circumſtances or qualities of thoſe materials. The caſks, which contain any liquid, are, ac-

cording to the ſea phraſe, to be *bung up* and *lilge free*, i. e. cloſely wedged up, in an horizontal poſition, and reſting on their quarters: ſo that the bilges, where they are thickeſt, being entirely free all round, cannot rub againſt each other, by the motion of the veſſel. Dry goods, or ſuch as may be damaged by the water, are to be carefully incloſed in caſks, bales, caſes, or wrappers; and wedged off from the bottom and ſides of the ſhip, as well as from the bows, maſts, and pump-well. Due attention muſt likewiſe be had to their diſpoſition, with regard to each other, and to the trim and center of gravity of the ſhip; ſo that the heavieſt may always be neareſt the keel, and the lighteſt gradually above them. See BALLAST, TRIM, and ROLLING.

STRAIT, (*etroite*, Fr.) a narrow channel, or arm of the ſea, contained between two oppoſite ſhores; as the ſtraits of Gibraltar; the ſtraits of Sunda; the ſtraits of Dover, &c.

STRAKES, or STREAKS, the uniform ranges of planks on the bottom and ſides of a ſhip; or the continuation of planks joined to the end of each other, and reaching from the *ſtem*, which limits the veſſel forward, to the *ſtern-poſt*, and faſhion *pieces*, which terminate her length abaft. The loweſt of theſe, which is called the *garboard-ſtreak*, is let into the keel below, and into the ſtem and ſtern-poſt. See thoſe articles.

STRAND, (*touron*, Fr.) one of the twiſts, or diviſions, of which a rope is compoſed. See the articles ROPE and CABLE.

STRAND alſo implies the ſea-beach: hence a ſhip is ſaid to be ſtranded when ſhe has run aground on the ſea-ſhore.

STRETCHER, (*banquet*, Fr.) a ſort of ſtaff fixed athwart the bottom of a boat, for the rower to place his feet againſt, in order to communicate a greater effort to his oar.

STRETCHING, *in navigation*, is generally underſtood to imply the progreſſion of a ſhip under a great ſurface of ſail, when *cloſe-hauled*. The difference between this phraſe and *ſtanding*, is apparently in the quantity of ſail, which, in the latter, may be very moderate, but in ſtretching, generally ſignifies exceſs: as, we ſaw the enemy at day-break ſtretching to the ſouthward, under a crowd of ſail, &c.

To STRIKE, *in navigation*, to run aſhore, or to beat upon the ground in paſſing over a bank or ſhallow.

To STRIKE alſo implies to lower or let down any thing; as an enſign, or topſail, in ſaluting; or, as the yards and topmaſts in tempeſtuous weather. It is, however, more particularly uſed to expreſs the lowering of the colours, in token of ſurrender, to a victorious enemy.

STRING, *in ſhip-building*, the higheſt range of planks in a ſhip's ceiling; or that which lies between the *gunnel*, and the upper edge of the upper deck-ports, as expreſſed by T in the MIDSHIP-FRAME, plate VII.

To STRIP *the maſts*, (*defuner*, Fr.) is to unrig a ſhip, or deprive the maſts of their machinery and furniture; an exerciſe which is otherwiſe called diſmantling.

STROKE, a ſingle ſweep of the oars in rowing. Hence they ſay, Row a long ſtroke! (*longue rime!* Fr.) which is intended to puſh the veſſel forward more

more ſteadily. See the article OAR; as alſo the French term NAGER, and the phraſes following it.

STROKESMAN, the perſon who rows the hindmoſt oar in a boat, and gives the ſtroke, which the reſt are to follow; ſo that all the oars may operate together.

STROP, *(entrope*, Fr.) a piece of rope *ſpliced* into a circular wreath, and uſed to ſurround the body of a block; ſo that the latter may be hung to any particular ſtation about the *maſts*, *yards*, or *rigging*. Thus, fig. 37. and 38. in plate II. repreſent two block-ſtrops of different ſorts. See BLOCK and EYE.

STROPS are alſo uſed occaſionally to faſten upon any large rope, for the purpoſe of hooking a *tackle* to the eye, or double part of the ſtrop; in order to extend, or pull with redoubled effort, upon the ſame rope; as in *ſetting-up* the rigging, where one hook of the tackle is fixed in a ſtrop applied to the particular *ſhroud*, and the other to it's laniard. See the article LANIARD.

STUDDING-SAILS, *(bonettes en etui*, Fr.) certain light ſails extended, in moderate and ſteady breezes, beyond the ſkirts of the principal ſails, where they appear as wings upon the yard-arms.

The word may be traced from ſeveral derivations; as from *ſcud*, *ſtead*, or *ſteady*. The ſmall ſails uſed by *ſloops*, ſchooners, and tartanes, when ſcudding, are nearly of the ſame ſize or figure with the lower ſtudding-ſails; and the accidental application of the former, to the uſual deſign of the latter, throws a probability on the derivation from *ſcud*; eſpecially as being uſed in the ſmall veſſels of our anceſtors, who were unacquainted with topmaſts; and, of courſe, had no conception of topmaſt-ſtudding-ſails. An ingenious friend of the author, ſeems, with great propriety, to derive it from ſteady; becauſe, when the wind is extremely feeble, the fluctuation of the ſea, although almoſt imperceptible, is communicated to the ſhip, and thence to the principal ſails; which, being ſhaken and flapped againſt the maſts, will, by their weight, prevent, or at leaſt conſiderably diminiſh, the operation of the wind. The ſtudding-ſails, on the contrary, being of a much lighter and thinner texture, more readily feel the effort of the breeze, and continue inflated, ſo as to puſh the ſhip forward, and give her head-way. By this circumſtance, ſhe becomes ſuſceptible of the power of the helm, and is accordingly retained in a ſteady courſe; and hence thoſe ſails may originally have been called *ſteadying*-ſails, afterwards corrupted into ſtudding-ſails. The laſt conjecture, which ſeems equally favourable, is drawn from the Saxon word *ſted*, to help or aſſiſt; in which ſenſe, thoſe ſails may be conſidered as auxiliar, being ſet occaſionally to help the others, or aſſiſt the ſhip's courſe; and thence called ſteading, or ſtedding-ſails. But the expreſſion of *ſteering-ſails*, however adopted by many officers, is a moſt contemptible conceit, without either authority or reaſon to ſupport it. The others are implicitly ſubmitted to the reader's deciſion.

The topmaſt ſtudding-ſails, or thoſe which are ſet on the out ſide of the top ſails, are ſpread below by a boom, which, ſhifting out from the extremities of the main and fore-yards, as explained in the article SADDLE, puſhes out their lower corners: and their upper edges, which are attached

to a light pole, are hoiſted up to the topſail-yard-arms. See alſo BOOM-IRON, in the article IRON-WORK.

The lower ſtudding-ſails, which are ſpread beyond the ſkirts or *leech* of the main-ſail and fore-ſail, are fixed nearly in the ſame manner; only that the boom, which extends their bottoms, is generally hooked to the *chains* by means of a *gooſe-neck*; or elſe ſwings off along with the ſail, to which it is ſuſpended; being kept ſteady behind by a rope called the *guy*.

STUFF, (*courée*, Fr.) any compoſition, or melted maſs, uſed to ſmear or daub the maſts, ſides, or bottom of a ſhip. That which is chiefly uſed for the lower maſts is ſimply turpentine, reſin, or varniſh of pine: for the topmaſts, tallow or butter: for the ſides, turpentine, varniſh of pine, tar and oil, or tar mixed with oil and red oker: and for the bottom, a mixture of tallow, ſulphur, and reſin, or tar: whale-oil and broken glaſs; or any part of theſe ingredients: and this application is called giving a new coat of ſtuff to the maſts, ſides, &c.

SUPERCARGO, an officer charged with the accounts of the cargo, and all other commercial affairs in a merchant-ſhip.

SUPPLY, a freſh recruit of proviſions or ſtores ſent to a ſhip or fleet.

SURF, the ſwell of the ſea which breaks upon the ſhore, or any rock lying near the ſurface of the ſea.

SURGE, the ſame as a wave; which ſee.

SURVEY, an examination made by ſeveral naval officers into the ſtate or condition of the proviſions, or ſtores, belonging to a ſhip, or fleet of men of war.

SURVEYORS *of the navy*, two officers, who ſit at the navy-board, being inveſted with the charge of building and repairing his Majeſty's ſhips, at the different dock-yards of the kingdom: for which purpoſe they are trained to the theory and practice of ſhip-building. It is alſo their office to know the ſtate of the navy; to audit the accounts of all boatſwains and carpenters ſerving therein; and to enquire into the condition of all naval ſtores, at home or abroad, in order to ſupply whatſoever may be deficient.

SWAB, (*fauber*, Fr. *ſwabb*, Swed.) a ſort of mop formed of a large bunch of old rope-yarns, and uſed to clean the decks and cabins of a ſhip: hence the perſon who uſes it is called the ſwabber.

SWABBER, (*balayeur d'une navire*, Fr.) ſhip's ſweeper, uſually called captain's ſwabber.

SWEEPER *of the ſky*, (*balai du ciel*, Fr.) a name given by ſailors to the N. W. winds of America.

SWEEPING, (*draguer*, Fr.) the act of dragging the bight, or looſe part of a ſmall rope, along the ſurface of the ground, in a harbour, or road, in order to hook and recover ſome anchor, wreck, or other material, ſunk at the bottom. It is performed by faſtening the two ends of this rope to the ſides of two boats which are abreaſt of each other, at ſome diſtance. To the middle of the rope are ſuſpended two cannon-ſhot, or ſomething which weighs heavy, in order to ſink it to the ground: ſo that, as the boats advance by rowing ahead, the rope drags along the bottom, to hook any anchor, &c. for which they are ſearching.

SWELL,

SWELL, (*enflement*, Fr.) generally denotes an heavy and continued agitation of the waves, according to a particular direction: as there is a great ſwell ſetting into the bay. It is, however, more particularly applied to the fluctuating motion of the ſea, which remains after the expiration of a ſtorm: as alſo, to that which breaks on the ſea-ſhore; or upon rocks, or ſhallows.

SWIFTER, a rope uſed to confine the bars of the capſtern in their ſockets, whilſt the men are heaving it about; for which purpoſe it is paſſed through holes in the extremities of the bars, ſo as to ſtrain them firmly together like the ſpokes of a wheel; which is accordingly called ſwifting. See the article CAPSTERN.

SWIFTER is alſo a ſtrong rope, ſometimes uſed to encircle a boat longitudinally, as well to ſtrengthen and defend her ſides, as to enable her the better to reſiſt the impreſſion of other boats which may run againſt her occaſionally. It is uſually fixed about a foot under the boat's upper edge, or gunnel.

SWIFTERS are likewiſe two *ſhrouds* fixed on the ſtarboard and larboard ſide of the lower maſts, above all the other ſhrouds, as an additional ſecurity to the maſts. The hoiſters are never confined, like the other ſhrouds, by *Catharpings*. See that article.

To SWING, to turn round the anchors, or *moorings*, at the change of the wind, or tide: it is uſually expreſſed of a ſhip, either when ſhe is moored by the head, or *riding* at a ſingle anchor.

T.

TABLING, *(bander*, Fr.) a ſort of broad hem formed on the ſkirts and bottoms of a ſhip's ſails, to ſtrengthen them in that part which is attached to the bolt-rope.

TACK, *(couet*, Fr.) a rope uſed to confine the foremoſt lower-corners of the *courſes* and *ſtay-ſails* in a fixed poſition, when the wind croſſes the ſhip's courſe obliquely. The ſame name is alſo given to the rope employed to pull out the lower corner of a *ſtudding-ſail* or *driver* to the extremity of it's boom.

The main-ſail and fore-ſail of a ſhip are furniſhed with a tack on each ſide, which is formed of a thick rope tapering to the end, and having a knot wrought upon the largeſt end, by which it is firmly retained in the clue of the ſail. By this means one tack is always faſtened to windward, at the ſame time that the *ſheet* extends the ſail to leeward. See CHESTREE.

TACK is alſo applied, by analogy, to that part of any ſail to which the tack is uſually faſtened.

A ſhip is ſaid to be on the ſtarboard or larboard tack, when ſhe is *cloſe-hauled*, with the wind upon the ſtarboard or larboard ſide; and in this ſenſe the diſtance which ſhe ſails in that poſition is conſidered as the length of the tack; although this is more frequently called a BOARD. See that article.

To TACK *(virer vent devant*, Fr.) to change the courſe from one board to another, or turn the ſhip about from the ſtarboard to the larboard tack, in a contrary wind. Thus the ſhip A, fig. 2. plate XI. being cloſe-hauled on the larboard tack, and turning her prow ſuddenly to windward, receives the impreſſion of the wind on her head-ſails *a*, by which ſhe falls off upon the line of the ſtarboard tack *a*. Tacking is alſo uſed, in a more enlarged ſenſe, to imply that manœuvre, in navigation, by which a ſhip makes an oblique progreſſion to the windward, in a zigzag direction. This, however, is more uſually called beating or turning to windward. See BEATING and TURNING.

Thus, ſuppoſe a ſhip A, fig. 2. plate XI. bound to a port B lying to windward, with the wind northerly, as expreſſed by the arrow. The ſails *a*, *b*, *c*, being braced obliquely with the keel, the wind alſo falls upon their ſurfaces in an oblique direction, by which the ſhip is puſhed to leeward, as explained in the article LEE-WAY. Hence, although ſhe apparently ſails W. N. W. upon the larboard tack, as expreſſed in the dotted line A*d*, and E. N. E. upon the other *d f*, yet if the lee-way is only one point, (and indeed it is ſeldom

dom leſs in the ſmootheſt water), the courſe will accordingly be W. *by* N. upon one tack, and E. *by* N. upon the other, as repreſented by the lines A *e*, and *e g*.

If the port A were directly to windward of the ſhip, it is evident that both tacks ought to be of equal length; or, in other words, that ſhe ought to run the ſame diſtance upon each tack: but as the place of her deſtination lies obliquely to windward, ſhe muſt run a greater diſtance upon one tack than the other; becauſe the extremities of both *boards* ſhould be equally diſtant from the line of her true courſe B A; ſo the larboard tack A *e*, croſſing the courſe more obliquely than the other *e g*, will neceſſarily be much longer.

As the true courſe, or the direct diſtance from B to A, is only 12 leagues, it is evident, that with a favourable wind ſhe could reach it in a few hours. On the contrary, her diſtance is conſiderably increaſed by the length of her boards, in a contrary wind; which, by it's obliquity with her ſails, operates alſo to retard her velocity. Thus her firſt board A *e*, on a W. *by* N. courſe, is equal to 5. 7 leagues. The ſecond tack *e g*, is 9. 2 leagues E *by* N.: the third tack, parallel to A *e*, is 11. 5: the fourth, parallel to *e g*, is 9. 2: and the fifth, parallel to the firſt, 11. 7 leagues. Finally, the ſixth board is 4. 8 leagues parallel to the ſecond, which brings her to the port B. By this ſcheme it appears that ſhe has run more than four times the extent of the line A B, her primitive diſtance; and this in the moſt favourable circumſtances of a contrary wind, viz. when the ſea is ſmooth, and when ſhe may carry her full topſails. For if the wind blows ſtronger, to render it neceſſary to *reef* the topſails, ſhe will ſoon make two points of *leeway*, and accordingly run eaſt on one board and weſt on the other. In this ſituation ſhe will neither approach nor recede from the place of her deſtination: but if the wind increaſes, the ſea will alſo be enlarged; a circumſtance that ſtill further augments the lee-way. Hence the veſſel will gradually fall off from the port, in proportion to the augmentation of the wind and ſea, which occaſions a proportional increaſe of lee-way.

In order to explain the theory of tacking a ſhip, it may be neceſſary to premiſe a known axiom in natural philoſophy, 'That every body will perſevere in a ſtate of reſt, or of moving uniformly in a right line, unleſs it be compelled to change it's ſtate by forces impreſſed; and that the change of motion is proportional to the moving force impreſſed, and is made according to the right line in which that force is exerted.'

By this principle it is eaſy to conceive how a ſhip is compelled to turn into any direction, by the force of the wind acting upon her ſails, in horizontal lines. For the ſails may be ſo arranged as to receive the current of air, either directly, or more or leſs obliquely: hence the motion communicated to the ſails muſt of neceſſity conſpire with that of the wind upon their ſurfaces. To make the ſhip tack, or turn round with her head to the windward, it is therefore neceſſary, after ſhe has received the firſt impreſſion from the *helm*, that the head-ſails ſhould be ſo diſpoſed as to diminiſh the effort of the wind, in the firſt inſtant of her motion, and that the whole force of the wind ſhould be exerted on the *after*-ſails, which, operating on the ſhip's ſtern, carries it round like a

weather-cock. But ſince the action of the after-ſails, to turn the ſhip, will unavoidably ceaſe when her head points to the windward, it then becomes neceſſary to uſe the head-ſails, to prevent her from *falling-off*, and returning to her former ſituation. Theſe are accordingly laid *aback* on the lee-ſide, to puſh the veſſel's fore-part towards the oppoſite ſide, till ſhe has fallen into the line of her courſe thereon, and fixed her ſails to conform with that ſituation.

It has been obſerved above, that the firſt effort to turn the ſhip in tacking is communicated by the helm, which is then put to the lee-ſide. This circumſtance being announced by the pilot, or commanding-officer, who then calls out, *Helm's a-lee!* the head-ſails are immediately made to ſhiver in the wind, by caſting looſe their *ſheets* or *bowlines*. The pilot then calls, *Up tacks and ſheets!* which is executed by looſening all the ropes which confine the corners of the lower ſails, in order that they may be more readily ſhifted to the other ſide. When the ſhip has turned her head directly to windward, as in *d*, fig. 2. plate XI. the pilot gives the order to turn about the ſails on the main and mizen-maſts, by the exclamation, *Haul main-ſail, haul!* the bowlines and braces are then inſtantly caſt off on one ſide, and as expeditiouſly drawn in on the other ſide, ſo as to wheel the yards about their maſts: the lower corner of the main-ſail is, by means of it's tack, pulled down to it's ſtation at the cheſtree; and all the after-ſails are, at the ſame time, adjuſted to ſtand upon the other board. Finally, when the ſhip has fallen off five or ſix points, as *b*, fig. 2. plate XI. the pilot cries, *Haul of all!* or, *Let go, and haul!* then the ſails on the fore-maſt are wheeled about by their braces: and as the ſhip has then a tendency to fall-off, ſhe is checked by the effort of the helm, which for that purpoſe is put *hard a-lee*. The fore-tack, or the lower corner of the fore-ſail, being fixed in it's place, the bowlines are hauled; and the other ſails, which have been neglected in the hurry of tacking, are properly arranged to the wind; which exerciſe is called trimming the ſails. See LEE-WAY and SAILING.

TACKLE, *(palan*, Fr.) pronounced *taicle*, a machine formed by the communication of a rope with an aſſemblage of blocks, and known in mechanics by the name of pulley.

Tackles are uſed in a ſhip to raiſe, remove, or ſecure weighty bodies; to ſupport the maſts; or to extend the ſails and rigging. They are either moveable, as communicating with a *runner*; or fixed, as being hooked in an immoveable ſtation; and they are more or leſs complicated, in proportion to the effects which they are intended to produce.

If *a b d e*, fig. 3. plate XI. be a ſingle block, upon which are ſuſpended the weights *f g*, then ſince the neareſt diſtance of the ropes *f g*, from the center of motion *c*, and *a c* equal to *d c*, the block will be reduced to the lever or balance *a d* with reſpect to it's power: Since *a c* is then equal to *d c*, it is apparent that *f g* will always be in equilibrium. As no advantage therefore can be acquired, in raiſing a weight by an immoveable ſingle block, it is only rendered uſeful by changing the direction of the moving power. This circumſtance is extremely convenient to the labourers, and often abſolutely neceſſary; particularly in raiſing bodies to a higher ſtation; as from the hold to the upper decks, or from the deck to the maſts or yards, &c. which

would otherwiſe be difficult or impracticable to perform. See alſo the articles Block and Whip.

When a ſingle block is moveable along with the body to which it is attached, fig. 4. plate XI. as the blocks of the *brace-pendents*, *reef-tackle*, *pendents*, *jigers*, &c. the momentum of the power is doubled; becauſe it moves twice as faſt as the weight, or body to which it is attached. For in the ſame time that any part of the rope *f*, moves upward from *f* to *g*, equal in length to the two equal ropes *d* and *c*, the block, and conſequently the weight annexed, will be drawn through the ſpace *e h*, whoſe length is equal to one of the ropes only.

When a tackle conſiſts of two or more fixed and moveable blocks, wherein one rope communicates with the whole; if one end of the rope be fixed, as in fig. 5. 6. and 7. in order to proportion the weight to the reſiſtance, the power applied muſt be to the weight, as one, to twice the number of *ſheaves* in the moveable blocks: becauſe, in the efforts of a tackle, the velocity of the moving power is, to the velocity of the riſing or moving body, as twice the number of moveable ſheaves to unity, as appears in fig. 5. which conſiſts of one fixed block *a*, and another moveable as *e*. For ſince one rope operates on all the ſheaves from *g* to *f*, the part at *f*, lying beyond the fixed block, and called the *fall*, cannot be drawn down and lengthened, unleſs the two parts *d* and *c*, on each ſide of the moveable block, be at the ſame time equally drawn up and ſhortened. Hence it is evident, that the part *a f* will be lengthened twice as much as either *d* or *e* is ſhortened, becauſe whatever is taken from each of thoſe parts is added to the length of *a f*; but the point *f*, to which the power is applied, deſcends as faſt as *a f* is lengthened; and the point *e*, to which the weight is faſtened, aſcends as faſt as *d* or *e* is ſhortened. If therefore, a weight ſuſpended at *f*, be to a weight ſuſpended at *e*, as one to two, they will balance each other, as being in the reciprocal ratio of their velocities.

Whatever has been obſerved with regard to the tackles above mentioned, is equally applicable to all others, and is in the ſame manner demonſtrable, viz. that the velocity with which the mechanical force moves, in raiſing a weight, is to the velocity wherewith the weight riſes, as twice the number of moveable ſheaves to unity.

A tackle wherein both the blocks are moveable, and communicate with a runner, is repreſented by fig. 10. plate VIII. That part of the tackle which is fixed to one of the blocks, &c. is called the ſtanding part; all the reſt are called running parts; and that whereon the men pull when employing the tackle, is called the *fall*. The application of the tackle to mechanical purpoſes is termed *hoiſting* or *howſing*. See thoſe articles.

Ground Tackle. See Ground Tackle.

Tack-tackle, a ſmall tackle uſed occaſionally to pull down the tack of the principal ſails of a ſhip to their reſpective ſtations. There is alſo a tackle of this kind conſtantly fixed to the tacks of the main-ſail in *brigs*, *ſloops*, and *ſchooners*, for the ſame purpoſe. See the French term Palan, and the phraſes annexed thereto.

Winding TACKLE, (*caliorne*, Fr.) a tackle formed by a rope paſſing through two three-fold blocks.

TAFFAREL, (*couronnement*, Fr.) the upper part of a ſhip's ſtern, being a curved piece of wood, expreſſed by F F, in fig. 1. plate X. and uſually ornamented with ſculpture.

TAIL, a name given by ſailors to the extremities of a hurricane, wherein the violence is conſiderably exhauſted.

TAIL-BLOCK, a ſmall ſingle block, having a ſhort piece of rope attached to it, by which it may be faſtened to any object at pleaſure; either for convenience, or to increaſe the force applied to the ſaid object, as explained in the firſt part of the article tackle.

TAKING-IN, the act of brailing-up and furling the ſails at ſea, particularly when the wind increaſes. It is generally uſed in oppoſition to *ſetting*. See alſo FURL and SHORTEN.

TALLYING, (*border*, Fr.) a phraſe uſed by the common ſailors, implying the act of pulling aft the *ſheets*, or lower corners of the main-ſail and fore-ſail.

TAR, a ſort of liquid gum of a blackiſh hue, which diſtils from pines or fir-trees, either naturally or by inciſion; and being prepared by boiling, is uſed to pay the ſides of ſhips and boats, and their rigging, in order to preſerve them from the effects of the weather, by which they would otherwiſe ſoon become cracked, ſplit, or rotten.

TAR is alſo a figurative expreſſion for a ſailor of any kind.

TAR-PAWLING, (*prélart*, Fr.) a broad piece of canvas well daubed with tar, and uſed to cover the hatchways of a ſhip at ſea, to prevent the penetration of the rain, or ſea-water, which may occaſionally ruſh over the decks. See BATTENS.

TARTAN, (*tartana*, Ital.) a ſmall coaſting veſſel navigated in the Mediterranean ſea, and having only one maſt and a bowſprit, the principal ſail, which is extremely large, being extended by a lateen yard. See VESSEL.

TAUGHT, (*roide*, Fr. *dicht*, Dutch) the ſtate of being extended or ſtretched out. It is uſually applied to a rope or ſail, in oppoſition to ſlack.

TAUNT, (*foit*, Fr.) an epithet uſed in the ſea-language, to ſignify high or tall. It is peculiarly expreſſed of the maſts when they are of an extraordinary length, as *ſquare* is applied to the yards on the ſame occaſion.

TENDER, (*patache*, Fr.) a ſmall veſſel employed in the King's ſervice, on various occaſions; as, to receive volunteers and impreſſed men, and convey them to a diſtant place; to attend on ſhips of war or ſquadrons; and to carry intelligence or orders from one place to another, &c.

TENDING, the movement by which a ſhip turns or ſwings round her anchor in a tide-way, at the beginning of the flood or ebb. Thus, if the flood ſets northerly, it is evident that the ſhip, unleſs when moored head and ſtern, will fall into the line of the current, turning her head to the ſouthward. But as the reflux will for the ſame reaſon ſet to the ſouthward, the ſhip will of neceſſity turn about at the change of the tide, and carry her head to the northward: and the tranſition from one ſituation to the other is called tending or ſwinging.

TENON,

TENON, the end of a piece of timber cut ſmaller to enter into a mortiſe.

THICK-STUFF. See the articles Ship-BUILDING and MIDSHIP-FRAME.

THIMBLE, (*coſſe*, Fr.) a ſort of iron ring, whoſe outer ſurface is hollowed throughout it's whole circumference, in order to contain, in the channel or cavity, a rope which is ſpliced about it, and by which it may be hung in any particular ſtation. See plate XII. fig. 1. It is uſed to guide the direction of ſome running rope, which paſſes through it, from one place to another. See SPAN.

THOLES, (*tholet*, Fr.) certain ſmall pins driven perpendicularly into the upper edge of a boat, as expreſſed by *e*, fig. 1. plate III. In the exerciſe of rowing, the oar is contained between the two tholes, in the ſpace which is called the *row lock*. Sometimes there is only one pin to each oar, as in the boats navigated on the Mediterranean ſea. In that caſe the oar is hung upon the pin by means of a ſtrop; and indeed this method is much more ancient than the former. See the article ROWING.

THROAT, a name given to the inner end of a *gaff*, or to that part which is next to the maſt. It is oppoſed to *peek*, which implies the outer extremity of the ſaid gaff, or that part of it which extends the ſail behind. Hence the ropes employed to hoiſt up, and lower a gaff, being applied to thoſe parts of it, are called the throat and peek haliards. See HALIARDS.

THUNDERING-BARRELS, (*bariques à feu*, or *foudroyantes*, Fr.) caſks which contain the fire-pots in a fire-ſhip.

THUS! the order by which the pilot directs the helmſman to keep the ſhip in her preſent ſituation when ſailing with a *ſcant* wind; ſo that ſhe may not approach too near the direction of the wind, and thereby ſhiver her ſails, nor fall to leeward, and run further out of her courſe. See STEERING.

THWART, (*banc*, Fr.) the ſeat or bench of a boat whereon the rowers ſit to manage the oars.

THWART-SHIPS, acroſs the ſhip. See the article ATHWART.

TIDE, (*maree*, Fr. *tyd*, Sax.) a regular periodical current of the water, ſetting alternately in a flux and reflux, produced by the influence of the moon.

If the ocean were equally deep in every place, the ebbing and flowing of the tide would be univerſally regular and equal; but the ſhallowneſs of the water in many places, and the ſtreightneſs of the channels, by which the tides may be conſiderably interrupted in ſome parts, and propagated in others, occaſion a great diverſity in their force and quantity. Hence, without an exact knowledge of all the circumſtances of the ſeveral places where they happen to run, as of the poſition of the land, the breadth and depth of channels, it is impoſſible to account for this diverſity.

The theory of the tides is conciſely deſcribed by a great author, in theſe words: "That motion of the water called tides is a riſing and falling of the ſea: the cauſe of this is the attraction of the moon, whereby the part of water in the great ocean which is neareſt the moon, being moſt ſtrongly attracted, is raiſed higher than the reſt; and the part oppoſite to it being leaſt attracted, is alſo higher than the reſt; and theſe two oppoſite elevations of the ſurface of the water in the great ocean, following the motion of the moon from eaſt to weſt, and ſtriking againſt the large coaſts of the con-

tments, from thence rebounds back again, and ſo makes floods and ebbs in narrows, ſeas, and rivers." *Locke.*

Irregular TIDE, *(Débauche.)*

With regard to the relative force of the tide on a ſhip floating therein, it is already explained in the article CURRENT.

TIER, *(batterie,* Fr.*)* a name given to the range of cannon mounted on one ſide of a ſhip's deck. See the articles DECK and CANNON.

TIER *of the cable,* is a range of the *fakes* or windings of the cable, which are laid within one another in an horizontal poſition, ſo as that the laſt becomes the innermoſt. See COILING.

Cable-TIER is the hollow ſpace in the middle of a cable, when it is *coiled.*

TIGHT, *(dicht,* Dutch*)* the quality whereby a veſſel reſiſts the penetration of any fluid, whether compreſſing it's ſurface, or contained within it. Hence a ſhip is ſaid to be tight, when her planks are ſo compact and ſolid as to prevent the entrance of the water in which ſhe is immerſed: and a caſk is called tight, when the ſtaves are ſo cloſe that none of the liquid contained therein can iſſue through or between them. In both ſenſes it is oppoſed to *leaky,* which ſee.

TILLER, *(timon,* or *barre de gouvernail,* Fr.*)* the bar or lever employed to turn the rudder in ſteering. See the article HELM.

TILT, *(tendelet,* Fr. *tyld,* Sax.*)* a ſmall canopy or awning of canvas, or other cloth, extended over the ſtern-ſheets of a boat, and ſupported by ſmall pillars, or broad laths of flexible wood incurvated into arches. It is uſed to cover the paſſengers from the rain or ſunſhine. See BOAT.

TIMBERS, *(couples,* Fr.*)* the ribs of a ſhip, or the incurvated pieces of wood, branching outward from the keel in a vertical direction, ſo as to give ſtrength, figure, and ſolidity to the whole fabric.

It has been obſerved in the article *Naval* ARCHITECTURE, that one timber is compoſed of ſeveral pieces united into one frame, which is accordingly called a frame of timbers by the artificers. Theſe different pieces are exhibited in plate I. PIECES of the HULL, by U, V, and W. The head of the lower piece, called the *floor*-timber, being cut ſquare, to join the heel of the next above it. To ſupport the connection of the timber in that place, another aſſemblage of pieces are formed, and joined in the ſame manner; ſo that when both the ſets are faſtened together, the joinings in one ſet will be nearly oppoſite to the middle of the pieces in the other. Hence it is evident, that the mould which ſerves for the loweſt piece will conform to the under part of the correſponding piece above it: and thus the mould, appropriated to every diviſion of a timber, will determine, or anſwer to the figure of the next adjoining thereto.

The timbers, whoſe areas or *planes* are perpendicular to the *keel,* are called ſquare timbers; and thoſe which are placed obliquely on the keel, as at the extremities of a ſhip, are called cant-timbers. The foremoſt of thoſe pieces on the ſhip's *bow,* are called the knuckle-timbers; and the hindmoſt on the quarter are called the faſhion-pieces.

The outlines, or *bends* of the principal timbers of the ſhip, are geometrically delineated in the plane of projection, plate I. as alſo in plate IV.

fig. 11. and plate X. fig. 2.: and their particular ſtations in the ſhip's length are repreſented in the horizontal plane, and that of the elevation, plate I. In order to give a more comprehenſive idea of their figures and dimenſions, we have exhibited a perſpective view of the carcaſe of a ſmall veſſel, in plate XII. fig. 2. conſiſting only of the *keel* A, the *ſtern-poſt* B, the *ſtem* C, the *tranſoms* K L M, and the *ribbands* F F.

TIMBER AND ROOM, or *room and ſpace*, is the diſtance betwixt the moulding edges of two adjoining timbers, which muſt always contain the breadth of two timbers; and ſometimes two or three inches between them. It muſt be obſerved, that one mould ſerves for two timbers; the fore ſide of the one being ſuppoſed to unite with the after ſide of the other, and ſo make only one line; which is actually the caſe in all the frames, which in ſome ſhips are every third, and in others every fourth timber. The frames are firſt put up, and faſtened to the ribbands, and afterwards the others are put up, which are called fitting timbers. *Murray's ſhip-building.*

TIMONEER, (*timonier*, Fr.) the helmſman, or perſon who manages the helm to direct the ſhip's courſe. See the article STEERING.

In a ſhip of war the quarter-maſters and timoneers are uſually choſen by the maſter, to *cun* and ſteer the ſhip; as alſo, to ſtow the proviſions in the hold, coil the cables, regulate the watch, &c. See QUARTER-MASTER.

TOGETHER! (*accord*, Fr.) the order given to the men in the exerciſes of *heaving*, rowing, hoiſting, &c. to act all in concert, or at the ſame inſtant.

TOGGEL, (*cabillot*, Fr.) a ſmall wooden pin, about five or ſix inches in length, and uſually tapering from the middle towards the extremities. It is uſed to fix tranſverſely in the lower part of a tackle, in which it ſerves as an hook whereby to attach the tackle to a ſtrop, ſlings, or any body whereon the effort of the tackle is to be employed.

There are alſo toggels of another kind, employed to faſten the top-gallant ſheets to the *ſpan*, which is knotted round the cap at the top-maſt-head. For as the lifts of the topſail-yard are out of uſe when the topſail is hoiſted, they are always converted into top-gallant-ſheets, to render the rigging at the maſt-heads as light and ſimple as poſſible. Before the topſail-yards can be lowered ſo as to be ſuſtained by their lifts, it therefore becomes neceſſary to transfer that part of the lift to the top-maſt-head, that ſo the whole weight of the yard may be ſuſtained by it's maſt-head, and no part thereof by the top-gallant-yard, which would otherwiſe be the caſe. This is performed by fixing the double part, or bight of the lift, within the eye of the ſpan above mentioned, and inſerting the toggel through the former, ſo as to confine it to the latter, which operation is amongſt ſailors called putting the ſheets in the *beckets*.

TOMPION, (*tampon*, Fr.) a ſort of bung or cork uſed to ſtop the mouth of a cannon. At ſea this is carefully encircled with tallow or putty, to prevent the penetration of the water into the bore, whereby the powder contained in the chamber might be damaged or rendered incapable of ſervice.

TONNAGE. See the article BURTHEN.

TOP, (*hune*, Fr.) a ſort of platform, ſurrounding the lower maſt-head, from which it projects on all ſides like a ſcaffold.

The

The principal intention of the top is to extend the top-maſt-ſhrouds, ſo as to form a greater angle with the maſt, and thereby give additional ſupport to the latter. It is ſuſtained by certain timbers fixed acroſs the *hounds* or ſhoulders of the maſt, and called the treſtle-trees and croſs-trees, the former of which are expreſſed by *k*, fig. 1. plate VI. and the latter by *l*, *l*, fig. 2. The plan of the top is repreſented in fig. 6. where *g g* repreſents the holes through which the top-maſt ſhrouds communicate with thoſe of the lower-maſt, as explained in the article SHROUD.

Beſides the uſe above mentioned, the top is otherwiſe extremely convenient to contain the materials neceſſary for extending the ſmall ſails, and for fixing or repairing the rigging and machinery, with more facility and expedition. In ſhips of war it is uſed as a kind of redoubt, and is accordingly fortified for attack or defence, being furniſhed with ſwivels, muſketry, and other fire-arms; and guarded by a thick fence of corded *hammocs*. Finally, it is employed as a place for looking out, either in the day or night.

The frame of the top is either cloſe-planked like a platform, or open like a grating. The former kind, which is exhibited in fig. 6. plate VI. is generally ſtronger and more convenient; but the latter is much better in tempeſtuous weather, as preſenting a ſmaller ſurface to the wind when the ſhip leans over to one ſide, and by conſequence being leſs expoſed to it's efforts.

In all ſhips of war, and in the largeſt merchantmen, the top is fenced on the aft-ſide by a rail of about three feet high, ſtretching acroſs, and ſupported by ſtanchions, between which a netting is uſually conſtructed, as appears by fig. 1. plate IX. The outſide of this netting is generally covered with red bayze or red painted canvas, which is extended from the rail down to the edge of the top, and called the top-armour. By this name it ſeems to have been conſidered as a ſort of blind, behind which the men may conceal themſelves from the aims of the enemy's fire-arms in time of action, whilſt they are charging their own muſkets, carabines, or ſwivels.

The dimenſions of tops in the royal navy are as follow. The breadth of the top *athwart-ſhips*, *q q*, fig. 6. is one third of the length of it's correſponding top-maſt. The length of all tops, from the foremoſt to the after edge *p p*, is equal to three fourths of their breadth athwart; and the ſquare hole in the middle is five inches to a foot of thoſe dimenſions. The treſtle-trees and croſs-trees extend nearly to the edge of the tops. See thoſe articles.

TOP-BLOCK. See BLOCK and MAST.

TOP-CHAIN. See the article CHAIN.

TOP-LANTHORN, (*fanal de hune*, Fr.) a large lanthorn placed in the after part of the top, in any ſhip where an admiral or commodore is perſonally aboard. It is ſupported on each ſide by iron braces *r*, as expreſſed in fig. 3. plate VI.

TOP-MAST, (*mât de hune*, Fr.) the ſecond diviſion of a maſt; or that part which ſtands between the upper and lower pieces. See the article MAST.

TOP-ROPE, (*guindereſſe*, Fr.) a rope employed to *ſway-up* a top-maſt or top-gallant-maſt in order to fix it in it's place; or to lower it in tempeſtuous weather, or when it is no longer neceſſary. The rope uſed on this occaſion for the top-maſts is, on account of their great weight, furniſhed with

an aſſemblage of pullies, at it's lower end, called the *top-tackle*, to hoiſt or lower the maſt with greater facility. The whole of this is particularly explained in the article MAST, and the plate therein referred to.

TOP-SAILS, certain large ſails extended acroſs the top-maſts, by the top-ſail-yard above, and by the yard attached to the lower maſt beneath; being faſtened to the former by *robands*, and to the latter by means of two great blocks fixed on it's extremities, through which the topſail-ſheets are inſerted, paſſing from thence to two other blocks fixed on the inner part of the yard cloſe by the maſt: and from theſe latter the ſheets lead downwards to the deck, where they may be ſlackened or extended at pleaſure. See the article SAIL. *N. B.* The top-gallant ſails are expanded above the topſail-yard, in the ſame manner as the latter are extended above the lower yard.

The ſeveral parts of the machinery by which the top-ſails are managed, as the *bowlines*, *braces*, *haliards*, *lifts*, and *ſheets*, being copiouſly defined in their proper places, it would be ſuperfluous to repeat their explanations.

TOPPING, (*apiquer*, Fr) the act of pulling one of the extremities of a yard higher than the other, by ſlackening one of the *lifts*, and pulling upon the oppoſite one, ſo as to place the yard at a greater or leſſer obliquity with the maſt.

TOPPING-LIFT, (*balancine de gui*, Fr.) a large and ſtrong tackle, employed to ſuſpend or *top* the outer end of a *gaff*, or of the *boom* of a main-ſail and fore-ſail; ſuch as are uſed in *brigs*, *ſloops*, or *ſchooners*. See SQUARE.

TORNADO, (*travade*, Fr.) a violent ſquall or guſt of wind riſing ſuddenly from the ſhore, and afterwards veering round the compaſs like a hurricane. Theſe are very frequent on the coaſts of Guinea and South Barbary. See WIND.

TOUCHING, the ſtate of a ſhip's ſails when they firſt begin to ſhiver, with their edges in the direction of the wind. It is either occaſioned by a ſudden alteration of the ſhip's courſe, or by a change of the wind, in which it blows more obliquely along the ſurface of the ſails, inſtead of falling into their cavities from behind, according to it's uſual direction. See FULL AND BY.

TOUCHING-AT, implies the circumſtance of ſtopping, or anchoring occaſionally, at ſome intermediate port, in the courſe of a voyage.

To TOW, (*remorquer*, Fr. *teon*, *teohan*, Sax.) to draw a ſhip forward in the water, by means of a rope attached to another veſſel or boat, which advances by the effort of rowing or ſailing.

Towing is either practiſed when a ſhip is diſabled, and rendered incapable of carrying ſail at ſea; or when her ſails are not fixed upon the maſts, as in a harbour: or when they are deprived of their force of action by a ceſſation of the wind.

When a ſhip of war is diſmaſted, or otherwiſe diſabled from carrying ſail at ſea, ſhe is uſually towed by a cable reaching from her bow to another ſhip a-head. In a harbour towing is practiſed by one or more boats, wherein all the force of the oars are exerted to make her advance.

TOW-LINE, a ſmall hawſer generally uſed to remove a ſhip from one part of an harbour or road to another, by means of anchors, capſterns, &c. as explained

explained in the article WARPING. It is alſo employed occaſionally to moor a ſmall veſſel in a harbour, conveniently ſheltered from the wind and ſea.

TOW-ROPE, a name given to any cable or other rope uſed in the exerciſe of rowing.

TRACING-LINE, (*martinet*, Fr.) a ſmall cord generally paſſing through a block or *thimble*, and uſed to hoiſt up any object to a higher ſtation, in order to render it leſs inconvenient. Such are the tracing-lines of the *awnings*, and thoſe of the *yard-tackles*, which, by hanging down in a cavity or bight, would be aukward and incommodious.

TRACK *of a ſhip*. See the article WAKE.

TRACT-SCOUT, a veſſel employed to carry goods or paſſengers up and down the rivers or canals in Holland, and the countries bordering on the Baltic ſea. It is uſually tracted by a horſe, who trots along the margin to a limited diſtance, after which he is relieved by another.

TRACTING, the act of pulling any veſſel or floating body along the ſtream of a canal or river, by means of a rope extending from the veſſel, &c. to the adjacent ſhore, and drawn along the banks of the river, by men or horſes.

TRADE-WINDS, certain regular winds blowing within or near the tropics, and being either periodical or perpetual. Thus, in the Indian ocean, they blow alternately from different points of the compaſs, during a limited ſeaſon; and, in the Atlantic ocean, continue almoſt without intermiſſion in the ſame direction. They are accordingly called trade-winds, from their great utility in navigation and commerce. See MONSOON and WIND.

TRAIN. See the articles CANNON and FIRE-SHIP.

TRANSOMS, (*barres d'arcaſſe*, Fr. *tranſenna*, Lat.) certain beams or timbers extended acroſs the *ſtern-poſt* of a ſhip, to fortify her after-part, and give it the figure moſt ſuitable to the ſervice for which ſhe is calculated.

Tranſoms are here defined *beams* or *timbers*, becauſe they partake equally of the form and purpoſe of thoſe pieces. Thus the deck-tranſom is the aftmoſt or hindmoſt beam of the lower deck, whereon all the deck-planks are rabbeted: and all the tranſoms are fixed athwart the ſtern-poſt, in the ſame manner as the floor-timbers are laid upon the keel. As the floor-timbers alſo, with regard to their general form and arrangement, have a *riſing*, by which the bottom becomes narrower as it aſcends towards the extremities; ſo the arms of the tranſoms, being gradually cloſer in proportion to their diſtance from the wing-tranſom downwards, give a ſimilar figure to that part of the ſhip, which accordingly becomes extremely narrow, from the counter towards the keel; and this general figure or curve is called the *flight* of the tranſoms.

Although theſe pieces are therefore extremely different in their figures, according to the extent of the angles formed by their branches or horns, each of them has nevertheleſs a double curve, which is partly vertical, and partly horizontal, with regard to it's ſituation in the ſhip. The former of theſe is called, by the artificers, the *round-up*, and the latter the *round-aft*.

As the tranſoms fill up the whole ſpace comprehended between the head of the ſtern-poſt above, and the aftmoſt floor-timbers below, it is neceſſary to diſtinguiſh them by particular names. Thus the higheſt is called the wing-tranſom:

tranſom: the next, the deck-tranſom; and afterwards follow the firſt, ſecond, and third tranſoms; together with the intermediate ones, as repreſented in fig. 1. plate X. and deſcribed in the explanation thereof.

The vertical direction of the arms or angles of the tranſoms, with regard to the ſhip's length, are expreſſed in the plane of ELEVATION; and their horizontal curves are alſo delineated on the plane of PROJECTION; both of which are repreſented under thoſe terms in plate I. and deſcribed in the general explanation of the planes in the article *Naval* ARCHITECTURE.

The higheſt tranſoms are connected to the ſhip's quarter by knees, which are bolted to thoſe pieces, and to the after-timbers. See the article SLEEPERS.

TRANSPORT. See the article SHIP.

TRANSPORTING, the act of removing a ſhip from one place to another, by the help of anchors and ropes. See WARPING.

TRAVELER, (*racambeau*, Fr.) a ſort of *thimble*, whoſe diameter is much longer, in proportion to the breadth of it's ſurface, than the common ones, fig. 3. plate XII. It is furniſhed with a tail formed of a piece of rope, about three feet in length, one end of which encircles the ring, to which it is *ſpliced*. Theſe machines are principally intended to facilitate the *heiſting* or *lowering* of the top-gallant-yards at ſea: for which purpoſe two of them are fixed on each *back-ſtay*, whereon they ſlide upwards and downwards, like the ring of a curtain upon it's rod: being thus attached to the extremities of the top-gallant-yard, they prevent it from ſwinging backwards and forwards, by the agitation of the ſhip, whilſt the yard is hoiſting or lowering at ſea.

TRAVERSE, in navigation, implies a compound courſe, or an aſſemblage of various courſes, lying at different angles with the meridian. Thus fig. 2. plate XI. exhibits the traverſes formed by a ſhip, when making an oblique progreſſion againſt the direction of the wind, as explained in the article TACKING.

The true courſe and diſtance reſulting from this diverſity of courſes is diſcovered by collecting the difference of latitude and departure of each courſe, and reducing the whole into one departure and one difference of latitude, according to the known rules of trigonometry. This reduction will immediately aſcertain the baſe and perpendicular; or, in other words, will give the difference of latitude and departure to diſcover the courſe and diſtance. See NAVIGATION.

TRAVERSE-BOARD, a thin circular piece of board, marked with all the points of the compaſs, and having eight holes bored in each, and eight ſmall pegs hanging from the center of the board. It is uſed to determine the different courſes run by a ſhip during the period of the watch; and to aſcertain the diſtance of each courſe. This implement is particularly uſeful in light and variable winds, at which time the helmſman marks the courſe every half hour, by fixing a peg in that point of the compaſs whereon the ſhip had advanced. Thus, if the wind is northerly at the beginning of the watch, the ſhip, being *cloſe-hauled* on the larboard *tack*, will ſteer W. N. W. If, after the firſt half hour, the wind changes to N. *by* W. the ſhip will fall off to W. *by* N. both of theſe courſes are marked by the helmſman upon the traverſe-

board, by putting in one peg for every half hour on which ſhe ſteers the ſame courſe; as, one peg into W. N. W. and two pegs into W. *by* N. if ſhe ſails an hour on the latter courſe; and ſo on. The lee-way and variation of the compaſs are afterwards allowed by the pilot, on ſumming up the whole.

TREE-NAILS, *(gournables*, Fr.) certain long cylindrical wooden pins, employed to connect the planks of a ſhip's ſide and bottom to the correſponding timbers.

The tree-nails are juſtly eſteemed ſuperior to ſpike-nails or bolts, which are liable to ruſt, and looſen, as well as to rot the timber; but it is neceſſary that the oak of which they are formed ſhould be ſolid, cloſe, and replete with gum, to prevent them from breaking and rotting in the ſhip's frame. They ought alſo to be well dried, ſo as to fill their holes when they are ſwelled with moiſture. They have uſually one inch in thickneſs to 100 feet in the veſſel's length; ſo that the tree-nails of a ſhip of 100 feet long, are one inch in diameter; and one inch and a half for a ſhip of 150 feet.

TRESTLE-TREES, *(teſſeaux*, Fr.) two ſtrong bars of timber fixed horizontally on the oppoſite ſides of the lower maſt-head, to ſupport the frame of the top, and the weight of the top-maſt. See MAST and TOP.

TRIM, *(manege du navire*, Fr. *trimman*, Sax. *to build)* implies, in general, the ſtate or diſpoſition by which a ſhip is beſt calculated for the ſeveral purpoſes of navigation.

Thus the trim of the *hold* denotes the moſt convenient and proper arrangement of the various materials contained therein, relatively to the ſhip's motion or ſtability at ſea. The trim of the maſts and ſails is alſo their moſt appoſite ſituation, with regard to the conſtruction of the ſhip, and the effort of the wind upon her ſails.

As the *ſtowage* of the hold, or the diſpoſition of the ſeveral articles of the cargo, conſiderably affects the ſhip's motion and ſtability, it will be neceſſary to give a general idea of the action of a heavy body upon the fluid that ſupports it, and the re-action of the fluid on the floating body.

The whole weight of any body, then, may be conſidered as united in it's center of gravity; ſo that, if it were ſuſpended by a line faſtened to this center, the line would hang in a perpendicular poſition, as directed through the center of gravity to the center of the earth. A body which floats in a fluid is not, however, ſupported by it's center of gravity, but by the compreſſion of the ſurrounding filaments of water: and each of theſe, being conſidered as infinitely ſmall, will act upon a very minute portion of the ſurface of the floating body, with regard to the ſpecific gravity, and conform to a principle applicable to all fluids, in proportion to the heighth of theſe filaments, viz. That the weight of a column of any fluid will be in proportion to a ſpecific gravity of the fluid and the heighth of the column multiplied by it's baſe.

But as heavy bodies endeavour, by their gravity, to approach the center of the earth, in a vertical line paſſing through their centers; ſo the preſſure of fluids endeavours to carry bodies in a vertical, tending from the center of the earth towards their ſurface, and paſſing through the center of gravity of the ſubmerged part, which forces them towards the ſurface. So, in any ſubmerged

merged body at reſt, theſe two oppoſite forces coincide in the ſame vertical, acting in a direction quite contrary to each other. *Bouguer's Traité du navire.*

From this theory it reſults, that the ſtability or trim of a ſhip chiefly depends upon her conſtruction, as conſidering the bottom to be homogeneous. This, however, can only happen when her cargo conſiſts of the ſame materials throughout, as with corn, ſalt, or any ſpecies ſtowed in bulk, and when her hold is entirely filled. For if the ſhip has not ſufficient breadth to reſiſt the effort of the wind upon her ſails; or if ſhe is built too high, or too ſharp in the floor, her center of gravity will be too high, and ſhe will be very *crank*, i. e. apt to overturn.

But as the *ſtiffneſs* of a ſhip, or quality to carry ſail without danger of overturning, depends very much on the *ſtowage* of the hold, the center of gravity may thereby be conſiderably lowered, by which her ſtability will be increaſed in proportion. It is a general maxim amongſt mariners, that a ſhip will not carry ſufficient ſail till ſhe is laden ſo deep that the ſurface of the water may glance on her extreme breadth *amidſhips*. She muſt therefore have a great deal of weight, as ballaſt, &c. to bring her to this ſituation, which is called a good ſailing trim.

Several circumſtances are alſo to be particularly conſidered with regard to the quality, weight, and ſtowage of the ballaſt. The center of gravity being placed too high, will render the ſhip incapable of carrying a ſufficient quantity of ſail; and by having it too low, ſhe will be in danger of rolling away her maſts. When it is placed too far forward, the ſhip will *pitch*, and *labour* heavily; and when too far aft, ſhe will occaſionally be expoſed to the dangerous circumſtance of a *pooping* ſea. Theſe extremes being carefully avoided, it remains to proportion the contents of every part of the *hold* to it's capacity, and to place the lighteſt materials uppermoſt. See STOWAGE.

TRIM, when applied to the ſails, denotes the general arrangement which is beſt calculated to accelerate the ſhip's courſe, according to the direction of the wind. See the article SAILING.

If the ſhip were always to ſail before the wind, it would be a very ſimple operation to trim the ſails; becauſe nothing elſe could be required than to diſpoſe them ſo as to receive the greateſt poſſible effort of the wind, which is evidently performed by arranging them at right angles with it's direction. But when the current of wind acts more directly upon the ſhip's ſide, it neceſſarily falls more obliquely on the ſurface of the ſails, ſo as to diminiſh their effort to puſh the ſhip forward; and to augment their tendency to make her incline to one ſide. Hence we may conclude, that an increaſe of the wind, when accompanied with a variation unfavourable to the ſhip's courſe, will by no means augment her velocity; becauſe the force, previouſly employed to puſh her forward, will afterwards operate to overturn her; and becauſe this impreſſion renders it neceſſary to reduce the quantity of ſail; the effort of which is further diminiſhed by the obliquity of the action of the wind upon it's ſurface.

By this theory it appears, that the effect of the wind to advance the ſhip decreaſes in proportion to it's obliquity with any ſail upon which it operates.

The mechanical diſpoſition of the ſails, according to every direction of the wind upon their ſurfaces, is copiouſly deſcribed in the article CLOSE-HAULED, LARGE, SAILING, and TACKING.

TRIM, when expreſſed of the maſts, denotes their poſition with regard to the ſhip and to each other. Thus, in the latter ſenſe, they ſhould neither be too near nor too far apart; and, in the former, they ſhould not be too far forward or aft; and, according to the ſituation or quality which communicates a greater velocity to the veſſel, they ſhould either be upright, or inclining aft, or forward.

TRIM *of a ſhip's hold*, (*eſtive*, Fr.) the diſpoſition of her cargo.

TRIM *the boat*, (*barque droite*, Fr.) See BOAT, and the phraſes ſucceeding it.

Sailing-TRIM, (*erre*, Fr.) ſtate of a ſhip by which ſhe is beſt calculated for the purpoſes of ſailing.

Sharp-TRIMMED, the ſituation of a ſhip's ſails in a ſcant wind.

TRIMONEER, a barbarous corruption of TIMONEER. See that article.

TRIP, a cant phraſe, implying an outward-bound voyage, particularly in the coaſting navigation. It alſo denotes a ſingle *board* in *plying* to windward.

TRIPPING, the movement by which an anchor is looſened from the bottom by it's cable or buoy-ropes. See ATRIP.

TROUGH, a name given to the hollow, or interval between two high waves, which reſembles a broad and deep trench perpetually fluctuating. As the *ſetting* of the ſea is always produced by the wind, it is evident that the waves, and conſequently the trough or hollow ſpace between them, will be at right angles with the direction of the wind. Hence a ſhip rolls heavieſt when ſhe lies in the trough of the ſea.

TROWSERS, a ſort of looſe breeches of canvas worn by common ſailors.

TRUCK, a piece of wood, which is either conical, cylindrical, ſpherical, or ſpheroidical.

Thus the trucks fixed on the ſpindle of a maſt-head, and which are otherwiſe called *acorns*, are in the form of a cone: and thoſe which are employed as wheels to the gun-carriages are cylinders. The trucks of the parrels aſſume the figure of a globe; and, laſtly, thoſe of the flag-ſtaffs reſemble an oblate ſpheroid. See the articles ACORN, CANNON, PARREL, and FLAG-STAF.

Trucks of the ſhrouds are nearly ſimilar to thoſe of the parrels: they are faſtened to the ſhrouds about twelve or fourteen feet above the deck, the hole in the middle being placed perpendicularly to contain ſome rope which paſſes through it. The intention of theſe is to guide the ſailors to the particular rope, which might otherwiſe be eaſily miſtaken for ſome other of the ſame ſize, eſpecially in the night.

Speaking-TRUMPET, (*trompette marine*, Fr.) a trumpet of braſs or tin uſed at ſea, to propagate the voice to a great diſtance, or to convey the orders from one part of the ſhip to another, in tempeſtuous weather, &c.

when they cannot otherwiſe be diſtinctly heard by the perſons to whom they are directed.

Fire-TRUNK. See the article FIRE-SHIP.

TRUNNIONS, (*tourillons*, Fr.) the two knobs or arms which project from the oppoſite ſides of a piece of artillery, and ſerve to ſupport it in the carriage. See CANNON and MORTAR.

TRUSS, (*trouſſe*, Fr.) a machine employed to pull a yard home to it's reſpective maſt, and retain it firmly in that poſition.

As the truſs is generally uſed inſtead of a parrel, it is rarely employed, except in flying top-gallant-ſails, which are never furniſhed with parrels. It is no other than a ring or traveller, which encircles the maſt, and has a rope faſtened to it's after-part, leading downward to the top or decks; by means of which the truſs may be ſtraitened or ſlackened at pleaſure. The *haliards* of the top-gallant-ſail being paſſed through this ring; and the ſail being hoiſted up to it's utmoſt extent; it is evident, that the yard will be drawn cloſe to the maſt, by pulling down the truſs cloſe to the upper part of the ſail. For, without the truſs, the ſail and it's yard would be blown from the maſt, ſo as to ſwing about, by the action of the wind, and the rolling of the veſſel; unleſs the yard were hoiſted cloſe up to the pulley wherein the haliards run; which ſeldom is the caſe in flying top-gallant ſails, becauſe they are uſually much ſhallower than thoſe which are fixed or *ſtanding*.

TRUSS-PARREL. See PARREL.

TRYING, (*à la cape*, Fr.) the ſituation in which a ſhip lies nearly in the *trough* or hollow of the ſea in a tempeſt, particularly when it blows contrary to her courſe.

In *trying*, as well as in *ſcudding*, the ſails are always reduced in proportion to the increaſe of the ſtorm. Thus, in the former ſtate, a ſhip may lie by the wind under a whole main-ſail, a whole fore-ſail, or a whole mizen; or under any of thoſe ſails, when diminiſhed by the *reef* or *balance*. As the leaſt poſſible quantity of ſail uſed in ſcudding are the *gooſe-wings* of the fore-ſail; ſo in *trying*, the ſmalleſt portion is generally the mizen-ſtay-ſail or main-ſtay-ſail: and in either ſtate, if the ſtorm is exceſſive, ſhe may lie with all the ſails furled, or, according to the ſea-phraſe, *under bare poles*.

The intent of ſpreading a ſail at this time is to keep the ſhip more ſteady, and, by preſſing her ſide down in the water, to prevent her from rolling violently; and alſo to turn her *bow* towards the direction of the wind, ſo that the ſhock of the waves may fall more obliquely on her flank, than when ſhe lies along the trough of the ſea. While ſhe remains in this ſituation, the helm is faſtened cloſe to the lee-ſide, or, in the ſea-language, *hard a-lee*, to prevent her as much as poſſible from falling-off. But as the ſhip is not then kept in equilibrium by the effort of her ſails, which at other times counterbalance each other at the *head* and *ſtern*, ſhe is moved by a ſlow but continual vibration, which turns her head alternately to windward and to leeward, forming an angle of three or four points in the interval. That part where ſhe ſtops, in approaching the direction of the wind, is called her *coming-to*, and the contrary exceſs of the angle *to leeward* is termed her *falling-off*.

Thus,

Thus, ſuppoſe the wind northerly, and a ſhip trying with her ſtarboard ſide to windward: if, in turning her head towards the ſource of the wind, ſhe arrives at N. W. $\frac{1}{4}$ N. or N. 39° W. and then declines to the leeward as far W. $\frac{1}{4}$ S. or S. 84° W. the former will be called her coming-to, and the latter her falling-off. In this poſition ſhe advances very little according to the line of her length, but is driven conſiderably to leeward, as deſcribed in the articles DRIFT and LEE-WAY.

TUCK, a name given to that part of the ſhip where the ends of the bottom-planks are collected together immediately under the ſtern or counter.

When this part, inſtead of being incurvated, and forming a convex ſurface, aſſumes the ſhape of a vertical or oblique plane, it is ſaid to be ſquare, as repreſented in fig. 8. plate IX. A ſquare tuck is accordingly terminated above by the wing-*tranſom*, and below and on each ſide by the *faſhion-pieces*.

TUMBLING-HOME, (*encabanement*, Fr.) that part of a ſhip's ſide which falls inward above the extreme breadth, ſo as to make the ſhip gradually narrower from the lower deck upwards. This angle is repreſented in general throughout all the timbers in the plane of *projection*, plate I. It is alſo more particularly expreſſed by Q T in the MIDSHIP-FRAME, plate VII. where it is evident, that the ſhip grows narrower from Q towards T. N. B. In all our old ſea-books, this narrowing of a ſhip from the extreme breadth upwards is called houſing-in. See UPPER-WORK.

TURNING-*to-windward*, (*chicaner le vent*, Fr.) that operation in ſailing wherein a ſhip endeavours to make a progreſs againſt the direction of the wind, by a compound courſe, inclined to the place of her deſtination. This method of navigation is otherwiſe called *plying*. See alſo BEATING and TACKING.

TYE, (*itague*, Fr.) a ſort of *runner* or thick rope, uſed to tranſmit the effort of a tackle to any *yard* or *gaff*, which extends the upper part of a ſail.

The tye is either paſſed through a block fixed to the maſt-head, and afterwards through another block moveable upon the yard or gaff intended to be hoiſted; or the end of it is ſimply faſtened to the ſaid yard or gaff, after communicating with the block at the maſt-head. See alſo the article JEARS.

V.

VAN, *(avante garde*, Fr.) the foremoſt diviſion of any naval armament, or that part which uſually leads the way to battle; or advances firſt in the order of ſailing. See CENTER, FLEET, and REAR.

VANE, a thin ſlip of bunting hung to the maſt-head, or ſome other conſpicuous place in the ſhip, to ſhow the direction of the wind. See *b*, fig. 1. plate I. It is commonly ſewed upon a wooden frame called the ſtock, which contains two holes whereby to ſlip over the ſpindle, upon which it turns about as the wind changes.

Dog-VANE, *(panon*, Fr.) a ſmall light vane, formed of a piece of pack-thread about two feet in length, upon which are fixed five or ſix thin ſlices of cork ſtuck full of light feathers. It is uſually faſtened to the top of a ſtaff two yards high, which is placed on the top of the ſhip's ſide on the quarter-deck, in order to ſhew the direction of the wind to the helmſman, particularly in a dark night, or when the wind is extremely feeble.

VANGS, a ſort of *braces* to ſupport the mizen *gaff*, and keep it ſteady. They are fixed on the outer-end or *peek*, and reach downwards to the aft-moſt part of the ſhip's ſide, where they are hooked and drawn tight, ſo as to be ſlackened when the wind is *fair*; and drawn in to windward when it becomes unfavourable to the ſhip's courſe.

VARIATION, the angle contained between the true meridian and the magnetic meridian.

'After the diſcovery of that moſt uſeful property of the magnet, or load-ſtone, namely, the giving hardened iron and ſteel a polarity, the compaſs was for many years uſed without knowing that it's direction in any ways deviated from the poles of the world: and about the middle of the 16th century, ſo certain were ſome of it's inflexibly pointing to the north, that they treated with contempt the notion of the variation, which about that time began to be ſuſpected *. However, careful obſervations ſoon diſcovered, that in England, and it's neighbourhood, the needle pointed to the eaſtward of the true north: but the quantity of this deviation being known, mariners became as well ſatisfied as if the compaſs had none; becauſe they imagined that the true courſe could be obtained by making allowance for the true variation.

'From ſucceſſive obſervations made afterwards, it was found, that the deviation of the needle from the north was not a conſtant quantity; but that

* Mr. Robertſon, librarian of the Royal Society, favoured the author with an inſpection of ſeveral curious remarks concerning the hiſtory of modern navigation; in which it appears, that the moſt early diſcoveries with regard to the magnetical variation were made about the year 1570. Mr. Robert Norman, from a variety of obſervations made by him nearly at that time, aſcertains it to have been 11° 15′ eaſterly, or one point of the compaſs.

it gradually diminiſhed, and at laſt, and about the year 1660, it was found at London that the needle pointed due north, and has ever ſince been getting to the weſtward, and now the variation is more than 20 degrees to the weſtward of the north: ſo that in any one place it may be ſuſpected the variation has a kind of libratory motion, traverſing through the north to unknown limits eaſtward and weſtward. But the ſettling of this point muſt be left to time.

'During the time of the ſaid obſervations it was alſo diſcovered, that the variation of the needle was different in different parts of the world, it being weſt in ſome places when it was eaſt in others; and in places where the variation was of the ſame name, yet the quantity of it greatly differed. It was therefore found neceſſary, that mariners ſhould every day, or as often as they had opportunity, make, during their voyage, proper obſervations for an amplitude or azimuth; whereby they might be enabled to find the variation of the compaſs in their preſent place, and thence correct their courſes.' *Robertſon's Elements of Navigation.*

Dr. Halley publiſhed, in the laſt century, a theory of the variations of the compaſs. In this work he ſuppoſes there are four magnetic poles in the earth, two of which are fixed and two moveable, by which he explains the different variation of the compaſs, at different times, in the ſame place. But it is impoſſible to apply exact calculations to ſo complicated an hypotheſis. M. Euler, ſon of the celebrated geometrician of that name, has however ſhewn, that two magnetic poles placed on the ſurface of the earth will ſufficiently account for the ſingular figure aſſumed by the lines which paſs through all the points of equal variation in the chart of Dr. Halley.

M. Euler firſt examines the caſe, wherein the two magnetic poles are diametrically oppoſite; 2d. he places them in the two oppoſite meridians, but at unequal diſtances from the poles of the world; 3d. he places them in the ſame meridian. Finally, he conſiders them ſituated in two different meridians. Theſe four caſes may become equally important; becauſe, if it is determined that there are only two magnetic poles, and that theſe poles change their ſituations, it may ſome time hereafter be diſcovered that they paſs through all the different poſitions.

Since the needle of the compaſs ought always to be in the plane which paſſes through the place of obſervation and the two magnetic poles, the problem is reduced to the diſcovery of the angle contained between this plane and the plane of the meridian. M. Euler, after having examined the different caſes, finds, that they alſo expreſs the earth's magnetiſm, repreſented in the chart publiſhed by Meſſ. Mountaine and Dodſon in 1744, particularly throughout Europe and North America, if the following principles are eſtabliſhed.

Between the Arctic pole and the magnetic pole 14° 53′.

Between the Antarctic pole and the other magnetic pole 29° 23′.

53° 18′ the angle at the north pole, formed by the meridians paſſing through the two magnetic poles.

250° the longitude of the meridian, which paſſes over the northern magnetic pole.

As the obſervations which have been collected with regard to the variation are, for the moſt part, looſe and inaccurate, it is impoſſible to repreſent them all with preciſion; and the great variations obſerved in the Indian ocean ſeem to require, ſays M. Euler, that the three firſt quantities ſhould be 14, 35, and 65 degrees. In the mean time, the general agreement is ſufficiently ſatisfactory.

The high reputation of Dr. Halley's magnetical chart renders it more particularly neceſſary to point out the errors contained therein *. There is evidently too little diſtance betweeen the lines of no variation, of which one croſſes the equator 17° weſtward of London, and the other 119° to the eaſtward. This makes 136 degrees only; whereas it ſhould neceſſarily exceed 180 and even 200, inaſmuch as the pole of the world is ſuppoſed further diſtant from the magnetic pole towards the ſouth than in the north, as is required by the other phænomena. Again, upon the coaſts diſcovered by *Diemen*, there was no variation in 1642; and Dr. Halley alſo ſuppoſes there was none in 1700. Meanwhile, by the alteration obſerved at Paris, the line of no variation ſhould be advanced 60° towards the ſouth, which will agree better with the calculations, and prove that the diſtance of the two interſections was really greater than Dr. Halley had eſtabliſhed.

The table of variation of Meſſ. Mountaine and Dodſon is accompanied with ſeveral intereſting particulars, which equally deſerve to be inſerted here.

At Barbadoes, (ſays Capt. Snow) the variation ſeems very nearly at a ſtand; for in the road I obſerved 5° eaſt; and by Dr. Halley's draught, in the year 1701, 5½ degrees. In 1747, at Port Royal keys, Jamaica, I obſerved the variation 7° 20′ E.; and on the coaſt of Carthagena, the ſame week, off the high land of Santa Martha, 7° 45′ nearly ſouth of Port Royal. Therefore theſe curves are not much altered: the curve at Jamaica is nearly at a ſtand, as though tied, and the ſouth part of them with the reſt dropping to the weſtward.

Under the equator, in longitude 40° E. from London, the higheſt variation during the whole fifty-ſix years appears to be 17° ½ W. and the leaſt 16° ½ W.: and in latitude 15° N. longitude 60° W. from London, the variation has been conſtantly 5° E.: but in other places the caſe has been widely different. For in the latitude of 10° S. longitude 60° E. from London, the variation has decreaſed from 17° W. to 7° ½ W.; and in latitude 10° S. longitude 5° W. from London, from 2° ½ W. to 12° ½ W.; and in latitude 15° N. longitude 20°, it has increaſed from 1° W. to 9° W.

But there is ſtill a more extraordinary appearance in the Indian ſeas. For inſtance, under the equator:

* Euler. De la Lande.

LONGITUDE East from London.	MAGNETICAL VARIATION. in 1700.	in 1756.
Degrees.	Degrees.	Degrees.
40	16¾ West.	16¾ West.
45	17¾ W.	14½ W.
50	17½ W.	11¾ W.
55	16½ W.	8¾ W.
60	15¼ W.	6 W.
65	13½ W.	4½ W.
70	11½ W.	3¼ W.
75	9¾ W.	1 W.
80	7¼ W.	0¾ East.
85	5½ W.	1¼ E.
90	4¼ W.	1 E.
95	3¼ W.	0½ West.
100	2½ W.	1 W.

Where the weſt variation, in the longitude 40° E. is the ſame in both the above years; and in 1700 the weſt variation ſeemed to be regularly decreaſing from longitude 50° E. to the longitude 100° E. but in 1756, we find the weſt variation decreaſing ſo faſt, that we have eaſt variation in the longitude 80°, 85, and 90° E. and yet in the longitude 95° and 100° E. we have weſt variation again. *Philoſophical Tranſactions for the year* 1757.

To theſe remarks may be ſubjoined the following extracts from the *Expoſition du calcul aſtronomique*, by *M. de la Lande*.

At the royal obſervatory in Paris, a magnetical needle of four inches deviated from the N. 18° 10′ towards the weſt, on the 15th of February 1759: and on the 22d of April 1760, the ſame needle varied 18° 20′. It is indeed natural to conceive, that nothing can be preciſely aſcertained by ten minutes upon a circle whoſe diameter is only four inches. It is nevertheleſs ſufficiently evident, that this variation continues to increaſe at Paris. In 1610 the needle declined 8° towards the eaſt, ſo that the variation has changed 26° 20′ in the ſpace of 150 years; and this appears particularly ſince 1740: for the ſame needle, which has always been uſed by M. Maraldi, is more than 3° advanced towards the weſt, beyond what it was at that period; and this makes 9′ in one year.

To VEER *and haul*, to pull a rope tight, by drawing it in and ſlackening it alternately, till the body to which it is applied acquires an additional motion, like the increaſed vibrations of a pendulum, ſo that the rope is ſtraitened to a greater tenſion with more facility and diſpatch. This method is particularly uſed in hauling the *bowlines*.

The wind is ſaid to veer and haul when it alters it's direction, and becomes more or leſs *fair*. Thus it is ſaid to veer aft and to haul forward.

To VEER *away the cable*. See CABLE.

VEERING, *(virer vent arriere*, Fr.) the operation by which a ſhip, in changing her courſe from one board to the other, turns her ſtern to windward.

ward. Hence it is uſed in oppoſition to *tacking*, wherein the head is turned to the wind, and the ſtern to *leeward*.

Thus the ſhip A, fig. 8. plate XI. having made the neceſſary diſpoſitions to veer, *bears away* gradually before the wind, till it blows obliquely upon the oppoſite ſide, which was formerly to leeward, as at *a*; and as the ſtern neceſſarily yields to this impreſſion of the wind, aſſiſted by the force of the helm, and the action of the waves upon the ſame quarter, the ſide which was formerly to leeward ſoon becomes to windward, as in the point a.

Since, by this movement, a ſhip loſes ground conſiderably more than by tacking, it is rarely practiſed except in caſes of neceſſity or delay: as, when the violence of the wind and ſea renders tacking impracticable; or when her courſe is ſlackened to wait for a pilot, or ſome other ſhip in company, &c.

It has been obſerved in the article TACKING, *that the change of motion in any body, will be in proportion to the moving force impreſſed, and made according to the right line in which that force operates.* Hence it is evident, that veering as well as tacking is a neceſſary conſequence of the ſame invariable principle; for as, in the latter, almoſt the whole force of the wind and of the helm are exerted on the hind part of the ſhip, to turn the prow to windward; ſo in the former, the ſame impreſſion, aſſiſted by the efforts of the helm, falls upon the prow, to puſh it to leeward; and the motion communicated to the ſhip muſt in both caſes neceſſarily conſpire with the action of the wind.

Thus, when it becomes neceſſary to veer the ſhip, the ſails towards the ſtern are either furled, or *brailed* up, and made to *ſhiver* in the wind; whilſt thoſe near the head are ſpread abroad, ſo as to collect the whole current of air which their ſurfaces can contain. Hence, while the whole force of the wind is exerted on the fore part of the ſhip to turn her about, it's effect is conſiderably diminiſhed, or altogether deſtroyed, on the ſurfaces of the after-ſails. The fore part accordingly yields to the above impulſe, and is put in motion; and this movement, conſpiring with that of the wind, puſhes the ſhip about as much as is neceſſary to produce the effect required. When ſhe is turned ſo that the wind will act upon that quarter which was formerly to leeward, as at the point a, fig. 8. her circular motion will be accelerated by extending ſome of the ſails near the ſtern, as the mizen, and by placing thoſe at the prow more obliquely, which will wheel the veſſel round with her bow to the windward; in the ſame ſituation, with regard to the wind, as when *cloſe-hauled*, or tacking.

When the tempeſt is ſo violent as to prevent the uſe of ſails, the effort of the wind operates almoſt equally on the oppoſite ends of the ſhip, ſo that the maſts and yards ſituated at the head and ſtern counterbalance each other. The effect of the helm is alſo conſiderably diminiſhed, becauſe the *head-way*, which gives life and vigour to all it's operations, is at this time feeble and ineffectual. Hence it is neceſſary to deſtroy this equilibrium which ſubſiſts between the maſt and yards *afore* and *abaft*, and to throw the balance forward, in order to prepare for veering. This is accordingly performed by bracing the foremoſt yards acroſs the direction of the wind, and arranging thoſe on the main-maſt and mizen-maſt directly in the line of the wind. If this expedient proves unſucceſsful, and it is abſolutely neceſſary to veer, in order to ſave

the ſhip from deſtruction, by overſetting or running aſhore, the mizen-maſt muſt inſtantly be cut away, and even the main-maſt, if ſhe yet remains incapable of anſwering the helm by bearing away before the wind.

VENT. See the articles CANNON and WINDAGE.

VESSEL, (*batiment*, Fr.) a general name given to the different ſorts of ſhips which are navigated on the ocean, or in canals and rivers. It is, however, more particularly applied to thoſe of the ſmaller kind, furniſhed with one or two maſts.

It has already been remarked in the article SHIP, that the views of utility, which ought always to be conſidered in a work of this kind, ſeemed to limit our general account of ſhipping to thoſe which are moſt frequently employed in European navigation. We have therefore collected into one point of view the principal of theſe in plate XII. ſo that the reader, who is unacquainted with marine affairs, may the more eaſily perceive their diſtinguiſhing characters, which are alſo more particularly deſcribed under the reſpective articles.

Thus fig. 4. plate XII. exhibits a ſnow under ſail; fig. 5. repreſents a ketch at anchor; fig. 6. a brig or brigantine; fig. 7. a bilander; fig. 8. a xebec; fig. 9. a ſchooner; fig. 10. a galliot; fig. 11. a dogger; all of which are under ſail; fig. 12. & 13. two gallies, one of which is under ſail, and the other rowing; and fig. 14. a ſloop.

The ketch, whoſe ſails are furled, is furniſhed with a try-ſail, like the ſnow; and it has a fore-ſail, fore-ſtay-ſail, and jib, nearly ſimilar to thoſe of a ſloop; but the ſails on the main-maſt and mizen-maſt are like thoſe of a ſhip. The main-ſail and main-top-ſail of the brig are like thoſe of the ſchooner; and the fore-maſt is rigged and equipped with ſails in the ſame manner as the ſhip and ſnow. The ſails, maſts, and yards of the xebec, being extremely different from theſe, are deſcribed at large under the article. In the ſchooner both the mainſail and foreſail are extended by a *boom* and *gaff*, as likewiſe is the ſloop's mainſail; the ſails of the dogger and galliot are ſufficiently expreſſed in the plate; and, finally, the gallies are navigated with lateen-ſails, which are extremely different from thoſe of the veſſels above deſcribed.

Agent VICTUALER. See AGENT VICTUALER.

To UNBALAST, (*deleſter*, Fr.) to diſcharge the ballaſt of a ſhip.

UNBENDING, (*déſamarrer*, Fr.) generally implies the act of taking off the ſails from their yards and ſtays; of caſting looſe the anchors from their cables, or of untying one rope from another. See alſo BEND.

UNBITTING, (*débitter*, Fr.) the operation of removing the turns of a cable from off the bits. See BITS and CABLE.

To UNDER-RUN, (*parcourir*, Fr.) to paſs under or examine any part of a cable or other rope, in order to diſcover whether it is damaged or intangled.

It is uſual to under-run the cables in particular harbours, as well to cleanſe them with brooms and bruſhes from any filth, ooze, ſhells, &c. collected in the ſtream; as to examine whether they have ſuſtained any injury under the ſurface of the water; as, from rocky ground, or by the friction againſt other cables or anchors.

To UNDER-RUN *a tackle*, is to ſeparate the ſeveral parts of which it is compoſed, and range them in order, from one block to the other; ſo that the general effort may not be interrupted, when it is put in motion.

UNDER SAIL, the ſtate of a ſhip when ſhe is looſened from her moorings, and under the government of her ſails and rudder. See HELM and SAIL.

UNLACING, *(déboutonner*, Fr.) the act of looſening and taking off the *bonnet* of a ſail from it's principal part.

To UNMOOR, *(deſafoucher*, Fr.) is to reduce a ſhip to the ſtate of *riding* by a ſingle anchor and cable, after ſhe has been *moored* or faſtened by two or more cables. See the articles ANCHOR and MOORING.

UNREEVING, the act of withdrawing or taking out a rope from any channel through which it had formerly paſſed; as in a *block*, *thimble*, *deadeye*, &c. See REEVE.

To UNRIG *a ſhip*, *(défuner*, Fr.) is to deprive her of the ſtanding and running *rigging*.

VOYAGE, *(campagne ſur mer*, Fr.) at ſea for a limited ſeaſon.

VOYOL, *(tournevire*, Fr.) a large rope uſed to unmoor, or heave up the anchors of a ſhip, by tranſmitting the effort of the *capſtern* to the cables.

This is performed by faſtening one part of the voyol to the cable in ſeveral places, and by winding another part thereof three or four times about the capſtern, which anſwers the ſame purpoſe as if the cable itſelf were in that manner wound about the capſtern; and the voyol being much lighter and more pliant, is infinitely more convenient in this exerciſe. See the articles CAPSTERN and NIPPER.

If the cable is drawn into the ſhip by the main capſtern, the voyol is uſed without any block: but if the capſtern in the fore part of the ſhip be employed for this purpoſe, the voyol uſually paſſes through a large block attached to the main-maſt; and thence communicates with the jear-capſtern.

UPPER-DECK, the higheſt of thoſe decks which are continued throughout the whole of a ſhip of war, or merchantman, without any interruption, of ſteps or irregular aſcents. See DECK and WAIST.

UPPER-WORK, *(oeuvres mortes*, Fr.) a general name given to all that part of a ſhip which is above the ſurface of the water when ſhe is properly balanced for a ſea-voyage: hence it may be conſidered as ſeparated from the bottom by the main *wale*, as explained particularly in the article *Naval* ARCHITECTURE.

UPRIGHT, the ſituation wherein the oppoſite ſides of a ſhip are equally elevated above the ſurface of the water, as in fig. 2. plate VI. or when ſhe neither inclines to the right nor left, with regard to the vertical poſition of her ſtem and ſtern-poſt.

USES AND CUSTOMS *of the ſea*, certain general principles which compoſe the baſis of marine juriſprudence, and regulate the affairs of commerce and navigation.

W.

WAD, (*bourrelet*, Fr.) a quantity of old rope-yarns, hay, &c. rolled firmly together into the form of a ball, and uſed to confine the ſhot or ſhell, together with it's charge of powder, in the breech of a piece of artillery.

M. Le Blond obſerves, in his Elements of war, that the wad is neceſſary to retain the charge cloſely in the chamber of the cannon, ſo that it may not, when fired, be dilated around the ſides of the ball, by it's *windage* as it paſſes through the chace; a circumſtance which would conſiderably diminiſh the effort of the powder. But as the wad cannot be faſtened to the ſides of the bore, it is carried away in the ſame inſtant when the charge is inflamed, and that with ſo little reſiſtance, that it cannot, in any degree, retard the exploſion, or give time for the entire inflammation of the powder.

This reaſoning may with equal propriety be applied to the wad that covers the bullet; which, nevertheleſs, is abſolutely requiſite, to prevent it from rolling out when the piece is fired horizontally or pointed downwards. Both are therefore peculiarly neceſſary in naval engagements, becauſe, without being thus retained in it's chamber, the ſhot would inſtantly roll out of the chace by the agitation of the veſſel.

WAFT, (*berne*, Fr.) a ſignal diſplayed from the ſtern of a ſhip for ſome particular purpoſe, by hoiſting the enſign, furled up together into a long roll, to the head of it's ſtaff. It is particularly uſed to ſummon the boats off from the ſhore to the ſhip whereto they belong; or as a ſignal for a pilot to repair aboard. See SIGNAL.

WAIST, (*belle* or *embelle*, Fr.) that part of a ſhip which is contained between the quarter-deck and fore-caſtle, being uſually a hollow ſpace, with an aſcent of ſeveral ſteps to either of thoſe places.

When the waiſt of a merchant-ſhip is only one or two ſteps of deſcent from the quarter-deck, and fore-caſtle, ſhe is ſaid to be galley-built; but when it is conſiderably deeper, as with ſix or ſeven ſteps, ſhe is called frigate-built. See the articles DECK, DEEP-WAISTED, and FRIGATE-

WAKE, (*houaiche*, *ſillage*, Fr.) the print or track impreſſed by the courſe of a ſhip on the ſurface of the water. It is formed by the re-union of the body of water, which was ſeparated by the ſhip's bottom whilſt moving through it; and may be ſeen to a conſiderable diſtance behind the ſtern, as ſmoother than the reſt of the ſea. Hence it is uſually obſerved by the compaſs, to diſcover the angle of LEE-WAY.

A ſhip is ſaid to be in the wake, (*dans l'eau*, Fr.) of another, when ſhe follows her on the ſame track, or on a line ſuppoſed to be formed on the

continuation of her keel. Thus the ſhips *a b*, fig. 11. and *a b*, fig. 7. plate V. are all in the wake of the foremoſt *b*. See the article LINE.

Two diſtant objects obſerved at ſea are called in the *wake* of each other, when the view of the furtheſt is intercepted by the neareſt; ſo that the obſerver's eye and the two objects are all placed upon the ſame right line.

WALE-KNOT, or WALL-KNOT, a particular ſort of large knot raiſed upon the end of a rope, by untwiſting the *ſtrands*, and interweaving them amongſt each other. See the article KNOT.

WALE-REARED, an obſolete phraſe, implying *wall-ſided*, which ſee.

WALES, *(preceintes*, Fr.) an aſſemblage of ſtrong planks extending along a ſhip's ſide, throughout her whole length, at different heighths, and ſerving to reinforce the decks, and form the curves by which the veſſel appears light and graceful on the water.

As the wales are framed of planks broader and thicker than the reſt, they reſemble ranges of hoops encircling the ſides and *bows*. They are uſually diſtinguiſhed into the main-wale and the channel-wale; the breadth and thickneſs of which are expreſſed by Q and R in the MIDSHIP-FRAME, plate VII. and their length is exhibited in the ELEVATION, plate I. where L Q Z is the main-wale, and D R X the channel-wale, parallel to the former.

The ſituation of the wales, being aſcertained by no invariable rule, is generally ſubmitted to the fancy and judgment of the builder. The poſition of the gun-ports and ſcuppers ought, however, to be particularly conſidered on this occaſion, that the wales may not be wounded by too many breaches.

WALL-SIDED, the figure of a ſhip's ſide, when, inſtead of being incurvated ſo as to become gradually narrower towards the *upper part*, it is nearly perpendicular to the ſurface of the water, like a wall: and hence the derivation of the phraſe.

WALT, an obſolete or ſpurious term ſignifying *crank*. See that article.

WARP, *(cordelle*, Fr.) a ſmall rope employed occaſionally to remove a ſhip from one place to another, in a port, road, or river. And hence,

To WARP, *(remorquer*, Fr.) is to change the ſituation of a ſhip, by pulling her from one part of a harbour, &c. to ſome other, by means of warps, which are attached to buoys; to anchors ſunk in the bottom; or to certain ſtations upon the ſhore, as poſts, rings, trees, &c. The ſhip is accordingly drawn forwards to thoſe ſtations, either by pulling on the warps by hand, or by the application of ſome purchaſe, as a tackle, windlaſs, or capſtern, upon her deck. See thoſe articles.

When this operation is performed by the ſhip's leſſer anchors, theſe machines, together with their warps, are carried out in the boats alternately towards the place where the ſhip is endeavouring to arrive: ſo that when ſhe is drawn up cloſe to one anchor, the other is carried out to a competent diſtance before her, and being ſunk, ſerves to fix the other warp by which ſhe is further advanced.

Warping is generally uſed when the ſails are *unbent*, or when they cannot be ſucceſsfully employed, which may either ariſe from the unfavourable ſtate of the wind, the oppoſition of the tide, or the narrow limits of the channel.

WASH. See the article OAR.

WASH-BOARD, a broad thin plank fixed occaſionally on the top of a boat's ſide, ſo as to continue the heighth thereof, and be removed at pleaſure. It is uſed to prevent the ſea from breaking into the veſſel, particularly when the ſurface is rough, as in tempeſtuous weather.

WATCH, (*quart*, Fr.) the ſpace of time wherein one diviſion of a ſhip's crew remains upon deck, to perform the neceſſary ſervices, whilſt the reſt are relieved from duty, either when the veſſel is under ſail or at anchor.

The length of the ſea-watch is not equal in the ſhipping of different nations. It is always kept four hours by our Britiſh ſeamen, if we except the *dog*-watch between four and eight in the evening, that contains two reliefs, each of which are only two hours on deck. The intent of this is to change the period of the night-watch every twenty-four hours; ſo that the party watching from eight till twelve in one night, ſhall watch from midnight till four in the morning on the ſucceeding one. In France the duration of the watch is extremely different, being in ſome places ſix hours, and in others ſeven or eight: and in Turky and Barbary it is uſually five or ſix hours.

A ſhip's company is uſually claſſed into two parties; one of which is called the ſtarboard and the other the larboard watch. It is, however, occaſionally ſeparated into three diviſions, as in a *road*, or in particular voyages.

In a ſhip of war the watch is generally commanded by a lieutenant, and in merchant-ſhips by one of the mates; ſo that if there are four mates in the latter, there are two in each watch; the firſt and third being in the larboard, and the ſecond and fourth in the ſtarboard watch: but in the navy the officers who command the watch uſually divide themſelves into three parts, in order to lighten their duty.

WATCH-GLASSES, (*horloge*, Fr.) a name given to the glaſſes employed to meaſure the period of the watch, or to divide it into any number of equal parts, as hours, half-hours, &c. ſo that the ſeveral ſtations therein may be regularly kept and relieved; as at the *helm*, *pump*, *look-out*, &c.

To ſet the WATCH, is to appoint one diviſion of the crew to enter upon the duty of the watch; as at eight o'clock in the evening. Hence it is equivalent to *mounting the guard* in the army. See the French term BORDE'E.

WATER-BOARDS, (*bardis*, Fr.) or weather-boards of a boat, to keep out the waves or ſpray of the ſea.

WATER-BORNE, the ſtate of a ſhip, with regard to the water ſurrounding her bottom, when there is barely a ſufficient depth of it to float her off from the ground; particularly when ſhe had for ſome time reſted thereon.

For *Dead*-WATER, *Foul*-WATER, and *High*-WATER, ſee DEAD, FOUL, and HIGH.

WATER-LINES, (*linges d'eau*, Fr.) certain horizontal lines ſuppoſed to be drawn about the outſide of a ſhip's bottom, cloſe to the ſurface of the water in which ſhe floats. They are accordingly higher or lower upon the bottom, in proportion to the depth of the column of water required to float her. See a particular account of theſe in the article *Naval* ARCHITECTURE.

In order to conceive a clearer idea of the curves of thoſe lines when repreſented on a plane, let us ſuppoſe a ſhip laid *upright* on a level ground; ſo that the keel ſhall lie in the ſame poſition, with reſpect to the horizon, as when ſhe is laden. We may then deſcribe ſeveral black horizontal lines about her bottom, which may be whitened for that purpoſe.

If a ſpectator is ſuppoſed to be placed, at a competent depth, under the middle of her bottom, in a line perpendicular to the plane of the ground; he will then, viewing the bottom upwards, diſcover the horizontal curves of all the water-lines.

Theſe curves are all delineated on a plane, ſuppoſed to be formed by an horizontal ſection of the bottom, at the heighth of the load-water-line, (*ligne d'eau du vaiſſeau chargé*, Fr.)

WATER-LOGGED, the ſtate of a ſhip when, by receiving a great quantity of water into her hold, by leaking, &c. ſhe has become heavy and inactive upon the ſea, ſo as to yield without reſiſtance to the efforts of every wave ruſhing over her decks. As, in this dangerous ſituation, the center of gravity is no longer fixed, but fluctuating from place to place, the ſtability of the ſhip is utterly loſt: ſhe is therefore almoſt totally deprived of the uſe of her ſails, which would operate to overſet her, or preſs the head under water. Hence there is no reſource for the crew, except to *free* her by the pumps, or to abandon her by the boats as ſoon as poſſible.

WATER-SAIL, a ſmall ſail ſpread occaſionally under the lower ſtudding-ſail, or driver-boom, in a fair wind, and ſmooth ſea.

WATER-SHOT. See the article MOORING.

WATER-SPOUT, (*echilon*, Fr.) an extraordinary and dangerous meteor, conſiſting of a large maſs of water, collected into a ſort of column by the force of a whirlwind, and moved with rapidity along the ſurface of the ſea.

A variety of authors have written on the cauſe and effects of theſe meteors, with different degrees of accuracy and probability. As it would be ſuperfluous to enter minutely into their various conjectures, which are frequently grounded on erroneous principles, we ſhall content ourſelves with ſelecting a few of the lateſt remarks; and which are apparently ſupported by philoſophical reaſoning.

Dr. Franklin, in his phyſical and meteorological obſervations, ſuppoſes a water-ſpout and a whirlwind to proceed from the ſame cauſe, their only difference being, that the latter paſſes over the land, and the former over the water. This opinion is coroborated by *M. de la Peyme*, in the *Philoſophical Tranſactions*; where he deſcribes two ſpouts obſerved at different times in Yorkſhire, whoſe appearances in the air were exactly like thoſe of the ſpouts at ſea; and their effects the ſame as thoſe of real whirlwinds.

Whirlwinds have generally a progreſſive as well as a circular motion; ſo had what is called the ſpout at *Topſham*, deſcribed in the *Tranſactions*; and this alſo by it's effects appears to have been a real whirlwind. Water-ſpouts have alſo a progreſſive motion, which is more or leſs rapid; being in ſome violent, and in others barely perceptible.

Whirlwinds generally riſe after calms and great heats: the ſame is obſerved of water-ſpouts, which are therefore moſt frequent in the warm latitudes.

The wind blows every way from a large ſurrounding ſpace to a whirlwind. Three veſſels, employed in the whale-fiſhery, happening to be *becalmed*, lay in ſight of each other, at about a league diſtance, and in the form of a triangle. After ſome time a water-ſpout appeared near the middle of the triangle; when a briſk gale aroſe, and every veſſel made ſail. It then appeared to them all by the *trimming* of their ſails, and the courſe of each veſſel, that the ſpout was to leeward of every one of them; and this obſervation was further confirmed by the comparing of accounts, when the different obſervers afterwards conferred about the ſubject. Hence whirlwinds and water-ſpouts agree in this particular likewiſe.

But if the ſame meteor, which appears a water-ſpout at ſea, ſhould, in it's progreſſive motion, encounter and paſs over land, and there produce all the phænomena and effects of a whirlwind, it would afford a ſtronger conviction that a whirlwind and a water-ſpout are the ſame thing. An ingenious correſpondent of Dr. Franklin gives one inſtance of this that fell within his own obſervation*.

A fluid moving from all points horizontally towards a center muſt, at that center, either mount or deſcend. If a hole be opened in the middle of the bottom of a tub filled with water, the water will flow from all ſides to the center, and there deſcend in a whirl. But air flowing on or near the ſurface of land or water, from all ſides towards a center, muſt at that center aſcend; becauſe the land or water will hinder it's deſcent.

If theſe concentring currents of air be in the upper region, they may indeed deſcend in the ſpout or whirlwind; but then, when the united current reached the earth or water, it would ſpread, and probably blow every way from the center. There may be whirlwinds of both kinds; but from the effects commonly obſerved, Dr. Franklin ſuſpects the riſing one to be moſt frequent: when the upper air deſcends, it is perhaps in a greater body extending wider, as in thunder-guſts, and without much whirling; and when air deſcends in a ſpout or whirlwind, he conceives that it would rather preſs

* I had often ſeen water-ſpouts at a diſtance, and heard many ſtrange ſtories of them, but never knew any thing ſatisfactory of their nature or cauſe, until that which I ſaw at Antigua; which convinced me that a water-ſpout is a whirlwind, which becomes viſible in all it's dimenſions by the water it carries up with it.

There appeared, not far from the mouth of the harbour of St. John's, two or three water-ſpouts, one of which took it's courſe up the harbour. It's progreſſive motion was ſlow and unequal, not in a ſtrait line, but as it were by jerks or ſtarts. When juſt by the wharf, I ſtood about 100 yards from it. There appeared in the water a circle of about twenty yards diameter, which to me had a dreadful though pleaſing appearance. The water in this circle was violently agitated, being whiſked about, and carried up into the air with great rapidity and noiſe, and reflected a luſtre, as if the ſun ſhined bright on that ſpot, which was more conſpicuous, as there appeared a dark circle around it. When it made the ſhore, it carried up with the ſame violence ſhingles, ſtaves, large pieces of the roofs of houſes, &c. and one ſmall wooden houſe it lifted entirely from the foundation on which it ſtood, and carried it to the diſtance of fourteen feet, where it ſettled without breaking or overſetting; and, what is remarkable, though the whirlwind moved from weſt to eaſt, the houſe moved from eaſt to weſt. Two or three negroes and a white woman were killed by the fall of the timber, which it carried up into the air, and dropt again. After paſſing through the town, I believe it was ſoon diſſipated; for, except tearing a large limb from a tree, and part of the cover of a ſugar-work near the town, I do not remember any further damage done by it. I conclude, wiſhing you ſucceſs in your enquiry, and am, &c. W. M.

the

the roof of a houſe *inwards*, or force *in* the tiles, ſhingles, or thatch, and force a boat down into the water, or a piece of timber into the earth, than ſnatch them upwards, and carry them away.

The whirlwinds and ſpouts are not always, though moſt frequently, in the day-time. The terrible whirlwind which damaged a great part of *Rome*, June 11, 1749, happened in the night; and was ſuppoſed to have been previouſly a water-ſpout, it being aſſerted as an undoubted fact, that it gathered in the neighbouring ſea, becauſe it could be traced from Oſtia to Rome.

This whirlwind is ſaid to have appeared as a very black, long, and lofty cloud, diſcoverable, notwithſtanding the darkneſs of the night, by it's continually lightning, or emitting flaſhes on all ſides, puſhing along with a ſurpriſing ſwiftneſs, and within three or four feet of the ground. It's general effects on houſes were, ſtripping off the roofs, blowing away chimnies, breaking doors and windows, *forcing up the floors, and unpaving the rooms*, (ſome of theſe effects ſeem to agree well with the ſuppoſed vacuum in the center of the whirlwind) and the very rafters of the houſes were broke and diſperſed, and even hurled againſt houſes at a conſiderable diſtance, &c.

The Doctor, in proceeding to explain his conceptions, begs to be allowed two or three poſitions, as a foundation for his hypotheſis. 1. That the lower region of air is often more heated, and ſo more rarified, than the upper; and by conſequence ſpecifically lighter. The coldneſs of the upper region is manifeſted by the hail, which ſometimes falls from it in warm weather. 2. That heated air may be very moiſt, and yet the moiſture ſo equally diffuſed and rarified as not to be viſible till colder air mixes with it, at which time it condenſes and becomes viſible. Thus our breath, although inviſible in ſummer, becomes viſible in winter.

Theſe circumſtances being granted, he preſuppoſes a tract of land or ſea, of about ſixty miles in extent, unſheltered by clouds and unrefreſhed by the wind, during a ſummer's day, or perhaps for ſeveral days without intermiſſion, till it becomes violently heated, together with the lower region of the air in contact with it, ſo that the latter becomes ſpecifically lighter than the ſuperincumbent higher region of the atmoſphere, wherein the clouds are uſually floated: he ſuppoſes alſo that the air ſurrounding this tract has not been ſo much heated during thoſe days, and therefore remains heavier. The conſequence of this, he conceives, ſhould be, that the heated lighter air ſhould aſcend, and the heavier deſcend; and as this riſing cannot operate throughout the whole tract at once, becauſe that would leave too extenſive a vacuum, the riſing will begin preciſely in that column which happens to be lighteſt, or moſt rarified; and the warm air will flow horizontally from all parts to this column, where the ſeveral currents meeting, and joining to riſe, a whirl is naturally formed, in the ſame manner as a whirl is formed in a tub of water, by the deſcending fluid receding from all ſides of the tub towards the hole in the center.

And as the ſeveral currents arrive at this central riſing column, with a conſiderable degree of horizontal motion, they cannot ſuddenly change it to a vertical motion; therefore, as they gradually, in approaching the whirl, decline from right to curve or circular lines, ſo, having joined the

whirl, they aſcend by a ſpiral motion; in the ſame manner as the water deſcends ſpirally through the hole in the tub before mentioned.

Laſtly, as the lower air neareſt the ſurface is more rarified by the heat of the ſun, it is more impreſſed by the current of the ſurrounding cold and heavy air which is to aſſume it's place, and conſequently it's motion towards the whirl is ſwifteſt, and ſo the force of the lower part of the whirl ſtrongeſt, and the centrifugal force of it's particles greateſt. Hence the vacuum which encloſes the axis of the whirl ſhould be greateſt near the earth or ſea, and diminiſh gradually as it approaches the region of the clouds, till it ends in a point.

This circle is of various diameters, ſometimes very large.

If the vacuum paſſes over water, the water may riſe in a body or column therein to the heighth of about thirty-two feet. This whirl of air may be as inviſible as the air itſelf, though reaching in reality from the water to the region of cool air, in which our low ſummer thunder-clouds commonly float; but it will ſoon become viſible at it's extremities. The agitation of the water under the whirling of the circle, and the ſwelling and riſing of the water in the commencement of the vacuum, renders it viſible below. It is perceived above by the warm air being brought up to the cooler region, where it's moiſture begins to be condenſed by the cold into thick vapour; and is then firſt diſcovered at the higheſt part; which being now cooled condenſes what riſes behind it, and this latter acts in the ſame manner on the ſucceeding body; where, by the contact of the vapours, the cold operates faſter in a right line downwards, than the vapours themſelves can climb in a ſpiral line upwards; they climb, however, and as by continual addition they grow denſer, and by conſequence increaſe their centrifugal force; and being riſen above the concentrating currents that compoſe the whirl, they fly off, and form a cloud.

It ſeems eaſy to conceive, how, by this ſucceſſive condenſation from above, the ſpout appears to drop or deſcend from the cloud, although the materials of which it is compoſed are all the while aſcending. The condenſation of the moiſture contained in ſo great a quantity of warm air as may be ſuppoſed to riſe in a ſhort time in this prodigiouſly rapid whirl, is perhaps ſufficient to form a great extent of cloud: and the friction of the whirling air on the ſides of the column may detach great quantities of it's water, diſperſe them into drops, and carry them up in the ſpiral whirl mixed with the air. The heavier drops may indeed fly off, and fall into a ſhower about the ſpout; but much of it will be broken into vapour, and yet remain viſible.

As the whirl weakens, the tube may apparently ſeparate in the middle; the column of water ſubſiding, the ſuperior condenſed part drawing up to the cloud. The tube or whirl of air may nevertheleſs remain entire, the middle only becoming inviſible, as not containing any viſible matter.

Dr. Stuart, in the *Philoſophical Tranſactions*, ſays, "It was obſervable of all the ſpouts he ſaw, but more perceptible of a large one, that towards the end it began to appear like a hollow canal, only black in the borders, but white in the middle; and though it was at firſt altogether black and opaque,

yet the ſea-water could very ſoon after be perceived to fly up along the middle of this canal like ſmoke in a chimney."

When Dr. Stuart's Spouts were full charged, that is, when the whirling pipe of air was filled with quantities of drops and vapour torn off from the column, the whole was rendered ſo dark that it could not be ſeen through, nor the ſpiral aſcending motion diſcovered; but when the quantity aſcending leſſened, the pipe became more tranſparent, and the aſcending motion viſible. The ſpiral motion of the vapours, whoſe lines interſect each other on the neareſt and furtheſt ſide of this tranſparent part, appeared therefore to Stuart like ſmoke aſcending in a chimney; for the quantity being ſtill too great in the line of ſight through the ſides of the tube, the motion could not be diſcovered there, and ſo they repreſented the ſolid ſides of the chimney.

Dr. Franklin concludes by ſuppoſing a whirlwind or ſpout to be ſtationary, when the concurring winds are equal; but if unequal, the whirl acquires a progreſſive motion in the direction of the ſtrongeſt preſſure. When the wind that communicates this progreſſion becomes ſtronger above than below, or below than above, the ſpout will be bent or inclined. Hence the horizontal proceſs and obliquity of water-ſpouts are derived.

WATER-WAY, (*gouttiere*, Fr.) a long piece of timber ſerving to connect the ſides of a ſhip to her decks, and form a ſort of channel to carry off the water from the latter by means of ſcuppers. See that article.

The convexity of the decks, repreſented by N, M, N, in the MIDSHIP-FRAME, plate VII. neceſſarily carries the water towards the ſides, where this piece is fixed, which is principally deſigned to prevent the water from lodging in the ſeams, ſo as to rot the wood and oakum contained therein. The water-ways N N are therefore hollowed in the middle lengthways, ſo as to form a kind of gutter or channel, one ſide of which lies almoſt horizontally, making part of the deck, whilſt the other riſes upwards, and correſponds with the ſide, of which it likewiſe makes a part. They are ſcored down about an inch and a half, or two inches, upon the beams, and reſt upon lodging-knees or carlings. They are ſecured by bolts driven from without through the planks, timbers, and water-ways, and clinched upon rings on the inſide of the latter.

The ſcuppers, which are holes by which the water eſcapes from off the deck, are accordingly cut through the water-ways.

WAVE, a volume of water elevated by the action of the wind upon it's ſurface, into a ſtate of fluctuation.

Mr. Boyle has proved, by a variety of experiments, that the utmoſt force of the wind never penetrates deeper than ſix feet into the water; and it ſhould ſeem a natural conſequence of this, that the water put in motion by it can only be elevated to the ſame heighth of ſix feet from the level of the ſurface in a calm. This ſix feet of elevation being then added to the ſix of excavation, in the part whence that water was raiſed, ſhould give twelve feet for the greateſt elevation of a wave, when the heighth of it is not increaſed by whirlwinds, or the interruption of rocks or ſhoals, which always gives an additional elevation to the natural ſwell of the waves.

We are not to ſuppoſe, from this calculation, that no wave of the ſea can riſe more than ſix feet above it's natural level in open and deep water; for ſome immenſely higher than theſe are formed in violent tempeſts, in the great ſeas. Theſe, however, are not to be accounted waves in their natural ſtate; but they are ſingle waves compoſed of many others: for in theſe wide plains of water, when one wave is raiſed by the wind, and would elevate itſelf up to the exact heighth of ſix feet, and no more, the motion of the water is ſo great, and the ſucceſſion of the waves ſo quick, that during the time wherein this riſes, it receives into it ſeveral other waves, each of which would have been of the ſame heighth with itſelf. Theſe accordingly run into the firſt wave, one after another as it riſes: by this means it's riſe is continued much longer than it would naturally have been, and it becomes accumulated to an enormous ſize. A number of theſe complicated waves ariſing together, and being continued in a long ſucceſſion by the duration of the ſtorm, make the waves ſo dangerous to ſhipping, which the ſailors, in their phraſe, call *mountains high*.

WAY *of a ſhip*, the courſe or progreſs which ſhe makes on the water under ſail. Thus, when ſhe begins her motion, ſhe is ſaid to be under way; and when that motion increaſes, ſhe is ſaid to have freſh way through the water. Hence alſo ſhe is ſaid to have *head-way* or *ſtern-way*. See thoſe articles.

WEARING. See the article VEERING.

WEATHER is known to be the particular ſtate of the air with regard to the degree of the wind, to heat or cold, or to drineſs and moiſture.

WEATHER is alſo uſed as an adjective, applied by mariners to every thing lying to windward of a particular ſituation. Thus a ſhip is ſaid to have the weather-gage of another, when ſhe is further to-windward. Thus alſo, when a ſhip under ſail preſents either of her ſides to the wind, it is then called the weather-ſide; and all the rigging and furniture ſituated thereon are diſtinguiſhed by the ſame epithet; as, the weather-*ſhrouds*, the weather-*liſts*, the weather-*braces*, &c. See the article LEE.

WEATHER-BEATEN, (*battu*, Fr.) ſhattered by a ſtorm, or diſabled in battle.

To WEATHER, is to ſail to windward of ſome ſhip, bank, or head-land.

WEATHER-BIT, a turn of the cable of a ſhip about the end of the *windlaſs*, without the *knight-heads*. It is uſed to check the cable, in order to ſlacken it gradually out of the ſhip, in tempeſtuous weather, or when the ſhip rides in a ſtrong current. See alſo RING-ROPE.

WEATHER-SHORE, a name given by ſeamen to the ſhore lying to the windward.

To WEIGH, denotes in general to heave up the *anchor* of a ſhip from the ground, in order to prepare her for ſailing. See alſo AWEIGH.

WELL, an apartment formed in the middle of a ſhip's hold to incloſe the pumps, from the bottom to the lower deck. It is uſed as a barrier to preſerve thoſe machines from being damaged by the friction or compreſſion of the materials contained in the hold, and particularly to prevent the entrance of ballaſt, &c. by which the tubes would preſently be choaked, and

the pumps rendered incapable of ſervice. By means of this incloſure, the artificers may likewiſe more readily deſcend into the hold, in order to examine the ſtate of the pumps, and repair them, as occaſion requires.

WELL *of a fiſhing-veſſel*, an apartment in the middle of the hold, which is entirely detached from the reſt, being lined with lead on every ſide, and having the bottom thereof penetrated with a competent number of ſmall holes, paſſing alſo through the ſhip's floor, ſo that the ſalt-water running into the well is always kept as freſh as that in the ſea, and yet prevented from communicating itſelf to the other parts of the hold.

WELL-ROOM *of a boat*, the place in the bottom where the water lies, between the ceiling and the platform of the ſtern-ſheets, from whence it is thrown out into the ſea with a ſcoop.

WHARF, a perpendicular building of wood or ſtone raiſed on the ſhore of a road or harbour, for the convenience of lading or diſcharging a veſſel by means of cranes, *tackles*, *capſterns*, &c.

A wharf is built ſtronger or ſlighter, in proportion to the effort of the tide or ſea which it is to reſiſt, and to the weight which it is intended to ſupport.

WHARFINGER, the perſon who has the charge of a wharf, and takes account of all the articles landed thereon, or removed from it, into any veſſel lying alongſide thereof; for which he receives a certain fee called wharfage, which becomes due to the proprietor for the uſe of his machines and furniture.

WHEEL *of the helm*. See HELM.

WHELPS. See the article CAPSTERN.

WHERRY, (*bache*, *bachot*, Fr.) See YAWL and SKIFF.

WHIP, a ſort of ſmall tackle, either formed by the communication of a rope with a ſingle immoveable block, as fig. 3. plate XI. or with two blocks, one of which is fixed, and the other moveable, as fig. 5. It is generally uſed to hoiſt up light bodies, as empty caſks, &c. out of a ſhip's hold, which is accordingly called *whipping* them up. See TACKLE.

To WHIP, is alſo to tie a piece of pack-thread, ſpun-yarn, &c. about the end of a rope, to prevent it from being untwiſted and looſened.

Boatſwain's WHISTLE. See CALL.

WHOODING. See the article RABBET.

WINCH, a cylindrical piece of timber, furniſhed with an axis, whoſe extremities reſt in two channels placed horizontally or perpendicularly. It is turned about by means of an handle reſembling that of a draw-well, grind-ſtone, &c. and is generally employed as a *purchaſe*, by which a rope may be more conveniently or more powerfully applied to any object, than when uſed ſingly, or without the aſſiſtance of mechanical powers.

WIND, (*vent*, Fr.) a ſtream or current of air which may be felt; and uſually blows from one part of the horizon to it's oppoſite part.

The horizon, beſides being divided into 360 degrees, like all other circles, is by mariners ſuppoſed to be divided into four quadrants, called the north-eaſt, north-weſt, ſouth-eaſt, and ſouth-weſt quarters. Each of theſe quarters they divide into eight equal parts, called points, and each point into four equal

equal parts, called quarter-points. So that the horizon is divided into 32 points, which are called *rhumbs* or *winds*; to each wind is aſſigned a name, which ſhews from what point of the horizon the wind blows. The points of north, ſouth, eaſt, and weſt, are called *cardinal points*; and are at the diſtance of 90 degrees, or eight points from one another.

Winds are either conſtant or variable, general or particular. Conſtant winds are ſuch as blow the ſame way, at leaſt for one or more days; and variable winds are ſuch as frequently ſhift within a day. A general or *reigning* wind is that which blows the ſame way, over a large tract of the earth, almoſt the whole year. A particular wind is what blows, in any place, ſometimes one way, and ſometimes another, indifferently. If the wind blows gently, it is called a breeze; if it blows harder, it is called a gale, or a ſtiff gale; and if it blows with violence, it is called a ſtorm or hard gale*.

The following obſervations on the wind have been made by ſkilful ſeamen; and particularly the great Dr. Halley.

1ſt. Between the limits of 60 degrees, namely, from 30° of north latitude to 30° of ſouth latitude, there is a conſtant eaſt wind throughout the year, blowing on the Atlantic and Pacific oceans; and this is called the *trade-wind*.

For as the ſun, in moving from eaſt to weſt, heats the air more immediately under him, and thereby expands it; the air to the eaſtward is conſtantly ruſhing towards the weſt to reſtore the equilibrium, or natural ſtate of the atmoſphere; and this occaſions a perpetual eaſt wind in thoſe limits.

2d. The trade-winds near their northern limits blow between the north and eaſt, and near the ſouthern limits they blow between the ſouth and eaſt.

For as the air is expanded by the heat of the ſun near the equator; therefore the air from the northward and ſouthward will both tend towards the equator to reſtore the equilibrium. Now theſe motions from the north and ſouth, joined with the foregoing eaſterly motion, will produce the motions obſerved near the ſaid limits between the north and eaſt, and between the ſouth and weſt.

3d. Theſe general motions of the wind are diſturbed on the continents, and near their coaſts.

For the nature of the ſoil may either cauſe the air to be heated or cooled; and hence will ariſe motions that may be contrary to the foregoing general one.

4th. In ſome parts of the Indian ocean there are periodical winds, which are called Monſoons; that is, ſuch as blow half the year one way, and the other half-year the contrary way.

For air that is cool and denſe, will force the warm and rarified air in a continual ſtream upwards, where it muſt ſpread itſelf to preſerve the equilibrium: ſo that the upper courſe or current of the air ſhall be contrary to the under current; for the upper air muſt move from thoſe parts where the greateſt heat is; and ſo, by a kind of circulation, the N. E. trade-wind

* The ſwiftneſs of the wind in a great ſtorm is not more than 50 or 60 miles in an hour; and a common briſk gale is about 15 miles an hour. *Robertſon's Navigation.*

below

below will be attended with a S. W. above; and a S. E. below with a N. W. above: And this is confirmed by the experience of ſeamen, who, as ſoon as they get out of the trade-winds, generally find a wind blowing from the oppoſite quarter.

5th. In the Atlantic ocean, near the coaſts of Africa, at about 100 leagues from ſhore between the latitude of 28° and 10° north, ſeamen conſtantly meet with a freſh gale of wind blowing from the N. E.

6th. Thoſe bound to the Caribbee iſlands, acroſs the Atlantic ocean, find, as they approach the American ſide, that the ſaid N. E. wind becomes eaſterly; or ſeldom blows more than a point from the eaſt, either to the northward or ſouthward.

Theſe trade-winds, on the American ſide, are extended to 30, 31, or even to 32° of N. latitude; which is about 4° further than what they extend to on the African ſide: Alſo, to the ſouthward of the equator, the trade-winds extend three or four degrees further towards the coaſt of Braſil on the American ſide, than they do near the Cape of Good Hope on the African ſide.

7th. Between the latitudes of 4° north and 4° ſouth, the wind always blows between the ſouth and eaſt. On the African ſide the winds are neareſt the ſouth; and on the American ſide neareſt the eaſt. In theſe ſeas Dr. Halley obſerved, that when the wind was eaſtward, the weather was gloomy, dark, and rainy, with hard gales of wind; but when the wind veered to the ſouthward, the weather generally became ſerene, with gentle breezes next to a calm.

Theſe winds are ſomewhat changed by the ſeaſons of the year; for when the ſun is far northward, the Braſil S. E. wind gets to the ſouth, and the N. E. wind to the eaſt; and when the ſun is far ſouth, the S. E. wind gets to the eaſt, and the N. E. winds on this ſide of the equator veer more to the north.

8th. Along the coaſt of Guinea, from Sierra Leone to the iſland of St. Thomas, (under the equator) which is above 500 leagues, the ſoutherly and ſouth-weſt winds blow perpetually: for the S. E. trade-wind having paſſed the equator, and approaching the Guinea coaſt within 80 or 100 leagues, inclines towards the ſhore, and becomes ſouth, then S. E. and by degrees, as it approaches the land, it veers about to ſouth, S. S. W. and when very near the land it is S. W. and ſometimes W. S. W. This tract is troubled with frequent calms, and violent ſudden guſts of wind, called tornadoes, blowing from all points of the horizon.

The reaſon of the wind ſetting in weſt on the coaſt of Guinea is, in all probability, owing to the nature of the coaſt, which, being greatly heated by the ſun, rariſies the air exceedingly, and conſequently the cool air from off the ſea will keep ruſhing in to reſtore the equilibrium.

9th. Between the 4th and 10th degrees of north latitude, and between the longitude of Cape Verd, and the eaſtermoſt of the Cape Verd iſles, there is a tract of ſea which ſeems to be condemned to perpetual calms, attended with terrible thunder and lightnings, and ſuch frequent rains, that this part of the ſea is called the *rains*. In ſailing through theſe ſix degrees, ſhips are ſaid to have been ſometimes detained whole months.

The cauſe of this is apparently, that the weſterly winds ſetting in on this coaſt, and meeting the general eaſterly wind in this track, balance each other, and ſo produce the calms; and the vapours carried thither by each wind, meeting and condenſing, occaſion the almoſt conſtant rains.

The laſt three obſervations ſhew the reaſon of two things which mariners experience in ſailing from Europe to India, and in the Guinea trade.

And firſt. The difficulty which ſhips in going to the ſouthward, eſpecially in the months of July and Auguſt, find in paſſing between the coaſt of Guinea and Brazil, notwithſtanding the width of this ſea is more than 500 leagues. This happens, becauſe the S. E. winds at that time of the year commonly extend ſome degrees beyond the ordinary limits of 4° N. latitude; and beſides coming ſo much ſoutherly, as to be ſometimes ſouth, ſometimes a point or two to the weſt; it then only remains to ply to windward: And if, on the one ſide, they ſteer W. S. W. they get a wind more and more eaſterly; but then there is danger of falling in with the Braſilian coaſt, or ſhoals: and if they ſteer E. S. E. they fall into the neighbourhood of the coaſt of Guinea, from whence they cannot depart without running eaſterly as far as the iſland of St. Thomas; and this is the conſtant practice of all the Guinea ſhips.

Secondly. All ſhips departing from Guinea for Europe, their direct courſe is northward; but on this courſe they cannot proceed, becauſe the coaſt bending nearly eaſt and weſt, the land is to the northward. Therefore, as the winds on this coaſt are generally between the S. and W. S. W. they are obliged to ſteer S. S. E. or ſouth, and with theſe courſes they run off the ſhore; but in ſo doing, they always find the winds more and more contrary; ſo that when near the ſhore, they can lie ſouth; but at a greater diſtance they can make no better than S. E. and afterwards E. S. E. with which courſes they commonly fetch the iſland of St. Thomas and Cape Lopez, where finding the winds to the eaſtward of the ſouth, they ſail weſterly with it, till coming to the latitude of four degrees ſouth, where they find the S. E. wind blowing perpetually.

On account of theſe general winds, all thoſe that uſe the Weſt India trade, and even thoſe bound to Virginia, reckon it their beſt courſe to get as ſoon as they can to the ſouthward, that ſo they may be certain of a fair and freſh gale to run before it to the weſtward: And for the ſame reaſon thoſe homeward-bound from America endeavour to gain the latitude of 30 degrees, where they firſt find the winds begin to be variable; though the moſt ordinary winds in the north Atlantic ocean come from between the ſouth and weſt.

10th. Between the ſouthern latitudes of 10 and 30 degrees in the Indian ocean, the general trade-wind about the S. E. *by* S. is found to blow all the year long in the ſame manner as in the like latitudes in the Ethiopic ocean: and during the ſix months from May to December, theſe winds reach to within two degrees of the equator; but during the other ſix months, from November to June, a N. W. wind blows in the tract lying between the 3d and 10th degrees of ſouthern latitude, in the meridian of the north end of Madagaſcar; and between the 2d and 12th degree of ſouth latitude, near the longitude of Sumatra and Java.

11th.

11th. In the tract between Sumatra and the African coaſt, and from three degrees of ſouth latitude quite northward to the Aſiatic coaſts, including the Arabian ſea and the Gulf of Bengal, the Monſoons blow from September to April on the N. E. and from March to October on the S. W. In the former half-year the wind is more ſteady and gentle, and the weather clearer, than in the latter ſix months: and the wind is more ſtrong and ſteady in the Arabian ſea than in the Gulf of Bengal.

12th. Between the iſland of Madagaſcar and the coaſt of Africa, and thence northward as far as the equator, there is a tract, wherein from April to October there is a conſtant freſh S. S. W. wind; which to the northward changes into the W. S. W. wind, blowing at times in the Arabian ſea.

13th. To the eaſtward of Sumatra and Malacca on the north of the equator, and along the coaſts of Cambodia and China, quite through the Philippines as far as Japan, the Monſoons blow northerly and ſoutherly; the northern one ſetting in about October or November, and the ſouthern about May: Theſe winds are not quite ſo certain as thoſe in the Arabian ſeas.

14th. Between Sumatra and Java to the weſt, and New Guinea to the eaſt, the ſame northerly and ſoutherly winds are obſerved; but the firſt half year Monſoon inclines to the N. W. and the latter to the S. E. Theſe winds begin a month or ſix weeks after thoſe in the Chineſe ſeas ſet in, and are quite as variable.

15th. Theſe contrary winds do not ſhift from one point to it's oppoſite all at once; and in ſome places the time of the change is attended with calms, in others by variable winds: and it often happens on the ſhores of Coromandel and China, towards the end of the Monſoons, that there are moſt violent ſtorms, greatly reſembling the hurricanes in the Weſt Indies; wherein the wind is ſo exceſſively ſtrong, that hardly any thing can reſiſt it's force.

All navigation in the Indian ocean muſt neceſſarily be regulated by theſe winds; for if the mariners ſhould delay their voyages till the contrary Monſoon begins, they muſt either ſail back, or go into harbour, and wait for the return of the trade-wind.

The relative force of the wind upon a ſhip's ſails, and the epithets by which it is diſtinguiſhed, as *fair*, *large*, &c. according to the angle which it makes with her courſe, are explained in the article SAILING.

Reigning WIND. See REIGNING WIND.

To WIND *a ſhip or boat*, is to change her poſition, by bringing the ſtern to lie in the ſituation of the head; or directly oppoſite to it's former ſituation.

To WINDWARD, towards that part of the horizon from whence the wind bloweth.

WINDAGE, the difference between the diameter of a piece of artillery, and the diameter of the ſhot or ſhell correſponding thereto. See CANNON and MORTAR.

WINDING *a Call*, the act of blowing or piping upon a boatſwain's whiſtle, ſo as to communicate the neceſſary orders of *hoiſting*, *heaving*, *delaying*, *ſlackening*, &c. See the article CALL.

WINDING-TACKLE, a name uſually given to a tackle formed of three fixed and two or three moveable ſheaves. It is principally employed to hoiſt up any weighty materials into or out of a ſhip, in the exerciſes of lading and delivering. See TACKLE.

WINDLAS, (*vindas*, Fr.) a machine uſed in merchant-ſhips to heave up the anchors from the bottom, &c.

The windlaſs is a large cylindrical piece of timber, fig. 15. plate XII. formed on the principles of the *axis in peritrochio*. It is ſupported at the two ends by two frames of wood, *a*, *b*, placed on the oppoſite ſides of the deck near the fore-maſt, called *knight-heads*, and is turned about in this poſition as upon an axis, by levers called handſpecs, which are for this purpoſe thruſt into holes bored through the body of the machine. See the article HEAVING.

The lower part of the windlaſs is uſually about a foot above the deck. It is, like the *capſtern*, furniſhed with ſtrong *pauls*, *c*, *d*, to prevent it from turning backwards by the effort of the cable, when charged with the weight of the anchor, or ſtrained by the violent jerking of the ſhip in a tempeſtuous ſea. The pauls, which are formed of wood or iron, fall into notches, cut in the ſurface of the *windlaſs*, and lined with plates of iron. Each of the pauls, being accordingly hung over a particular part of the windlaſs, falls eight times into the notches at every revolution of the machine, becauſe there are eight notches placed on it's circumference under the pauls. So if the windlaſs is twenty inches in diameter, and purchaſes five feet of the cable at every revolution, it will be prevented from turning back, or loſing any part thereof, at every ſeven inches nearly, which is heaved in upon it's ſurface.

As this machine is heaved about in a vertical direction, it is evident that the effort of an equal number of men acting upon it will be much more powerful than on the capſtern; becauſe their whole weight and ſtrength are applied more readily to the end of the lever employed to turn it about. Whereas, in the horizontal movement of the capſtern, the exertion of their force is conſiderably diminiſhed. It requires, however, ſome dexterity and addreſs to manage the handſpec to the greateſt advantage; and to perform this the ſailors muſt all riſe at once upon the windlaſs, and, fixing their bars therein, give a ſudden jerk at the ſame inſtant, in which movement they are regulated by a ſort of ſong or howl pronounced by one of their number.

The moſt dextrous managers of the handſpec in heaving at the windlaſs are generally ſuppoſed the colliers of Northumberland: and of all European mariners, the Dutch are certainly the moſt aukward and ſluggiſh in this manœuvre.

WINDSAIL, a ſort of wide tube or funnel of canvas, employed to convey a ſtream of freſh air downward into the lower apartments of a ſhip.

This machine is uſually extended by large hoops ſituated in different parts of it's heighth. It is let down perpendicularly through the *hatches*, being expanded at the lower end like the baſe of a cone; and having it's upper part open on the ſide which is placed to windward, ſo as to receive the full current of the wind; which, entering the cavity, fills the tube, and ruſhes downwards into the lower regions of the ſhip. There are generally

three or four of theſe in our capital ſhips of war, which, together with the ventilators, contribute greatly to preſerve the health of the crew.

WINGS, a name given to thoſe parts of a ſhip's *hold* which are neareſt to the ſides, or furtheſt removed from the middle of her breadth.

This term is particularly uſed in the ſtowage of the ſeveral materials contained in the hold; as, Stow the large caſks *amidſhips*, and the ſmaller barrels in the wings. See TRIM and STOWAGE.

WINGS are alſo the ſkirts or extremities of a fleet when it is ranged into a line a-breaſt, or when bearing away upon two ſides of an angle. Thus the ſhips a, b. fig. 10. & 11. plate V. are in the wings of their fleet or ſquadron.

It is uſual to extend the wings of a fleet in the day-time, in order to diſcover any enemy which may fall into their tract. To prevent ſeparation, however, they are commonly ſummoned to draw nearer to the center of the ſquadron before night, by a ſignal from the commander in chief, which is afterwards repeated by ſhips in the intervals.

WOOLDING, (*ſurlier*, Fr. *woelen*, Dutch) the act of winding a piece of rope about a maſt or yard, to ſupport it in a place where it may have been *fiſhed* or *ſcarfed*; or when it is compoſed of ſeveral pieces united into one ſolid. See MAST.

WOOLDING is alſo the rope employed in this ſervice. Thoſe which are fixed on the lower maſts, are repreſented in *a*, fig. 1, 2, & 3. plate VI.

To WORK, (*manœuvrer*, Fr.) to direct the movements of a ſhip, by adapting the ſails to the force and direction of the wind.

A ſhip is alſo ſaid to work, when ſhe ſtrains and labours heavily in a tempeſtuous ſea, ſo as to looſen her joints or timbers. See PITCHING and ROLLING.

WORKING *to windward*, the operation by which a ſhip endeavours to make a progreſs againſt the wind. See BEATING, PLYING, TURNING and TACKING.

WORMING, (*emieller*, Fr.) the act of winding a rope ſpirally about a cable, ſo as to lie cloſe along the interval between every two ſtrands. It is generally deſigned to ſupport and ſtrengthen the cable, that it may be enabled to ſuſtain a greater effort when the ſhip rides at anchor; and alſo to preſerve the ſurface of the cable, where it lies flat upon the ground, near the ſtation of the anchor; particularly in moderate weather.

WRECK, the ruins of a ſhip which has been ſtranded or daſhed to pieces on a ſhelf, rock, or lee-ſhore, by tempeſtuous weather.

X.

XEBEC, a ſmall three-maſted veſſel, navigated in the Mediterranean ſea, and on the coaſts of Spain, Portugal, and Barbary. See fig. 8. plate XII.

The ſails of the xebec are in general ſimilar to thoſe of the polacre, but the hull is extremely different from that and almoſt every other veſſel. It is furniſhed with a ſtrong *prow*, and the extremity of the ſtern, which is nothing more than a ſort of railed platform or gallery, projects further behind the counter and buttock than that of any European ſhip.

Being generally equipped as a corſair, the xebec is conſtructed with a narrow floor, to be more ſwift in purſuit of the enemy; and of a great breadth, to enable her to carry a great force of ſail for this purpoſe, without danger of overturning. As theſe veſſels are uſually very low-built, their decks are formed with a great convexity from the middle of their breadth towards the ſides, in order to carry off the water, which falls aboard, more readily by their ſcuppers. But as this extreme convexity would render it very difficult to walk thereon at ſea, particularly when the veſſel rocks by the agitation of the waves, there is a platform of grating extending along the deck from the ſides of the veſſel towards the middle, whereon the crew may walk dry-footed, whilſt the water is conveyed through the grating to the ſcuppers.

When a xebec is equipped for war, ſhe is occaſionally navigated in three different methods, according to the force or direction of the wind.

Thus, when the wind is *fair*, and nearly aſtern, it is uſual to extend *ſquare* ſails upon the main-maſt; and indeed frequently on the fore-maſt: and as thoſe ſails are rarely uſed in a ſcant wind, they are of an extraordinary breadth.

When the wind is unfavourable to the courſe, and yet continues moderate, the ſquare yards and ſails are removed from the maſts, and laid by, in order to make way for the large lateen yards and ſails, which ſoon after aſſume their place: but if the foul wind increaſes to a ſtorm, theſe latter are alſo lowered down and diſplaced; and ſmall lateen yards with proportional ſails are extended on all the maſts.

The xebecs, which are generally armed as veſſels of war by the Algerines, mount from ſixteen to twenty-four cannon, and carry from 300 to 450 men, two-thirds of whom are generally ſoldiers.

By the very complicated and inconvenient method of working theſe veſſels, it will be readily believed, what one of their captains of Algiers acquainted the author, viz. That the crew of every xebec has at leaſt the labour of three *ſquare-rigged* ſhips, wherein the ſtanding ſails are calculated to anſwer every ſituation of the wind.

Y.

YACHT, a veſſel of ſtate, uſually employed to convey princes, ambaſſadors, or other great perſonages from one kingdom to another.

As the principal deſign of a yacht is to accommodate the paſſengers, it is uſually fitted with a variety of convenient apartments, with ſuitable furniture, according to the quality or number of the perſons contained therein.

The royal yachts are commonly rigged as ketches, except the principal one reſerved for the ſovereign, which is equipped with three maſts like a ſhip. They are in general elegantly furniſhed, and richly ornamented with ſculpture; and always commanded by captains in his majeſty's navy.

Beſides theſe, there are many other yachts of a ſmaller kind, employed by the commiſſioners of the exciſe, navy, and cuſtoms; or uſed as pleaſure-boats by private gentlemen.

YARD, (*vergue*, Fr.) a long piece of timber ſuſpended upon the maſts of a ſhip, to extend the ſails to the wind. See MAST and SAIL.

All yards are either ſquare or lateen; the former of which are ſuſpended acroſs the maſts at right angles, and the latter obliquely.

The ſquare yards, fig. 1. plate IX. are nearly of a cylindrical ſurface. They taper from the middle, which is called the *ſlings*, towards the extremities which are termed the *yard-arms*; and the diſtance between the ſlings and the yard-arms on each ſide, is, by the artificers, divided into quarters, which are diſtinguiſhed into the firſt, ſecond, third quarters, and yard-arms. The middle quarters are formed into eight ſquares, and each of the end parts is figured like the fruſtum of a cone. All the yards of a ſhip are ſquare except that of the mizen.

The proportions for the length of yards, according to the different claſſes of ſhips in the Britiſh navy, are as follows:

			Guns.
1000 : gun-deck : :	560 :	main yard expreſſed by *d*, fig. 1. plate IX. *Note*, the figure repreſents the yards and ſails of a ſhip of 74 guns.	100
	569 :		90 80
	570 :		70
	576 :		60
	575 :		50
	561 :		44
1000 : main-yard : :	880 :	fore-yard.	100 90 80
	874 :		all the reſt.

To apply this rule to practice, ſuppoſe the gun-deck 144 feet. The proportion for this length is, as 1000 is to 575, ſo is 144 to 83; which will be the length of the main-yard in feet, and ſo of all the reſt.

1000 : main-yard : :	820 :	mizen-yard.	100 90 80 60 44
	847 :		70
	840 :		24

1000

			Guns.
1000 : main yard : :	726 :	main topſail-yard	24
	720 :	*e*, fig. 1. plate IX.	all the reſt.
1000 : fore-yard : :	719 :	fore topſail-yard.	70
	726 :		24
	715 :		all the reſt.
1000 : main topſail-yard : :	690 :	main top-gall. yard	all the rates.
1000 : fore topſail-yard : :	696 :	fore top-gall. yard	70
	690 :	*f*, fig. 1. plate IX.	all the reſt.
1000 : fore topſail-yard : :	768 :	mizen topſail-yard	70
	750 :		all the reſt.

Croſs-jack and ſprit-ſail yards equal to the fore topſail yard.

Sprit-topſail yard equal to the fore top gallant-yard.

The diameters of yards are in the following proportions to their length.

The main and fore yards five ſevenths of an inch to a yard. The top-ſail, croſs-jack, and ſprit ſail yards, nine fourteenths of an inch to one yard. The top gallant, mizen topſail, and ſpritſail topſail yards, eight thirteenths of an inch to one yard.

The mizen-yard five ninths of an inch to one yard.

All ſtudding-ſail booms and yards half an inch to one yard in length.

The lifts of the main-yard are exhibited in the above figure, by *g*; the horſes and their ſtirrups, by *h*, *i*; the reef-tackles and their pendents, by *k*, *l*; and the braces and brace-pendents, by *m*, *n*.

The lateen-yards evidently derive their names from having been peculiar to the ancient Romans. They are uſually compoſed of ſeveral pieces faſtened together by wooldings, which alſo ſerve as ſteps whereby the ſailors climb to the *peek*, or upper extremity, in order to furl or caſt looſe the ſail.

The mizen-yard of a ſhip, and the main-yard of a bilander, are hung obliquely on the maſt, almoſt in the ſame manner as the lateen-yard of a xebec, ſettee, or polacre. See thoſe articles.

To brace the YARDS, (*braſſer*, Fr.) is to traverſe them about the maſts, ſo as to form greater or leſſer angles with the ſhip's length. See BRACE.

To ſquare the YARDS. See LIFT and SQUARE.

Dock-YARD. See the article DOCK-YARD.

YAW, a name given by ſeamen to the movement by which a ſhip deviates from the line of her courſe towards the right or left in ſteering.

YAWL, (*bache*, *bachot*, Fr.) a wherry or ſmall ſhip's boat, uſually rowed by four or ſix oars. See BOAT.

YEOMAN, an officer under the boatſwain or gunner of a ſhip of war, uſually charged with the ſtowage, account, and diſtribution of their reſpective ſtores.

YOKE, a name formerly given to the tiller, when communicating with two blocks or *ſheaves* affixed to the inner end of the tiller. It is now applied to a ſmall board or bar which croſſes the upper end of a boat's rudder at right angles, and having two ſmall cords extending from it's oppoſite extremities to the *ſtern-ſheets* of the boat, whereby ſhe is ſteered as with a tiller.

THE END.

TRANSLATION

OF THE

PHRASES AND TERMS OF ART

IN THE

FRENCH MARINE.

A

TRANSLATION

OF

French SEA-TERMS and PHRASES.

ABATE'E, or ABBATE'E, the movement of falling off to a certain point. It is particularly expreſſed of a ſhip when ſhe lies by, with ſome of her ſails aback.

ABATTRE, to bear away; to drive; to edge further to leeward. Hence they ſay, *Le vaiſſeau s'*ABAT, the ſhip drives or falls, to leeward. This phraſe is more peculiar to the motion of a ſhip when her anchor is looſened from the ground.

ABATTRE *un vaiſſeau*, to heave down or careen a ſhip.

ABORDAGE, the ſhock or concuſſion produced by two veſſels ſtriking each other in battle or otherwiſe; alſo the aſſault of boarding.

*Aller à l'*ABORDAGE, *ſauter à l'*ABORDAGE, to board or enter an enemy's ſhip in an hoſtile manner.

ABORDER, to fall or drive aboard a ſhip, by accident, or neglect of the ſteerſman; ſpoken of two veſſels when one or both are under ſail, or otherwiſe in motion.

ABORDER *un vaiſſeau de bout au corps*, to lay a ſhip aboard, by running the bowſprit over her waiſt.

ABOUGRI, or RABOUGRI, croſs-grained, or knotty; a term applied by ſhipwrights to timber, which, by this quality, is rendered unfit for ſhip-building.

ABOUT, the butt or end of any plank: alſo the place where the ends of two planks are joined on the ſhip's ſide, &c.

ABRAQUER. See EMBRAQUER.

ABRI, a cove, or place of anchorage under ſhelter of the weather-ſhore. Hence

ABRIE', becalmed, or ſkreened from the wind by an intervening ſhore.

ACASTILLAGE, or rather ENCASTILLAGE, a general name for the quarter-deck, poop, and fore-caſtle. Hence *accaſtillé* anſwers to deep-waiſted.

ACCLAMPER, to fortify a maſt or yard by the application of one or more fiſhes to it's ſurface.

ACCON, a ſmall flat-bottomed boat, for catching ſhell-fiſh.

ACCORD, the order to pull together on a rope or tackle; alſo to row together with the oars of a ſhip or boat.

ACCORDS, or ACCORES, props or ſhores fixed under a ſhip's wales, &c. to keep her upright, and ſupport her whilſt building; or when ſhe is brought into dock; or laid aground.

ACCORD *droit*, an upright ſhore or prop.

ACCORER, to prop or ſuſtain any weighty body, as a ſhip on the ground.

ACCOSTE, come aboard, or come alongſide; the order given to a ſmall veſſel or boat, to approach a ſhip.

ACCOSTER, or ACCOTER, to pull or thruſt any thing near or cloſe to ſome other, as the two blocks of a tackle, &c.

ACCOSTER *les huniers, ou les perroquets*, to haul home the top-ſail ſheets; or top-gallant ſheets.

ACCOTAR. See PLAT-BORD.

ACCOURSIE, a paſſage formed in a ſhip's hold, by a ſeparation of her ſtores, cargo, or proviſions, when ſhe is laden, to go fore and aft, as occaſion requires.

ACCROCHER, to board and grapple an enemy's ſhip.

ACCUL, the depth of a bay, or ſmall road.

ACCULEMENT, a name given to that part of a ſhip's bottom which becomes gradually narrower as it approaches the extremities at the ſtem and ſtern-poſt.

ACROTERE, a cape, head-land, or promontory.

ACTE *de délai*, an act by which a debtor loſes all his effects by ſhipwreck.

ADIEU-VA, an expreſſion of command, uſed by the maſter or pilot, to bid the ſhip's crew prepare for tacking, or veering, when the courſe is to be changed.

ADDONNER, to ſcant, or veer forward; expreſſed of the wind when it becomes unfavourable.

AFFALE, the order to lower or let down any thing.

AFFALE', to be embayed, or forced, by the violence of the wind, or current, too near a lee-ſhore.

AFFALER, to lower any thing by a tackle, as a yard, ſail, caſk, &c.

AFFINE, it clears away, or becomes fair. It is underſtood of the weather, after having been cloudy or over-caſt for ſome time.

AFFOLE'E, erroneous or defective; ſpoken of a magnetical needle which has loſt it's virtue.

AFFOURCHER, to moor by the head.

AFFRANCHIR, to free the ſhip, or clear her hold of water by the pumps.

AFFRE'TEMENT, the freight of a merchant-ſhip. Hence

AFFRETER, to freight.

AFFUT *de mer*, the carriage of a ſhip-cannon.

AGITER, to ſwell, or run high; expreſſed of a turbulent ſea.

AGRE'ER, to rig a ſhip, or equip her with yards, ſails, rigging, &c.

AGRE'S. There is no ſea-term in Engliſh which anſwers to this expreſſion, in it's full extent; unleſs we adopt the obſolete word *Tackling*, which is now entirely diſuſed by our mariners. The French term comprehends the rigging, yards, ſails, blocks, cables, and anchors; and is probably better tranſlated, machinery or furniture.

AIDE *major*, an officer whoſe duty reſembles that of our adjutant of marines.

AIDE *de canonnier*. See CANNONIER.

AIGU, ſharp or narrow towards the two ends, afore and abaft.

AIGUADE, a watering-place for ſhipping; alſo the proviſion or quantity of freſh water neceſſary for a ſea-voyage.

AIGUILLE, the prow or cut-water. See EPERON.

AIGUILLE alſo implies a topmaſt, or ſuch like piece of timber employed to ſupport a lowermaſt, in the act of careening.

AIGUILLE *de fanal*, an iron crank or brace, uſed to ſuſtain the poop-lanthorn.

AIGUILLE *aimantée*, the magnetical needle.

AIGUILLES *de tré*, or *de trevier*, ſail-needles, or bolt-rope needles.

AIGUILLETTES. See PORQUES.

AILURES. See ILLOIRES.

AIMANT, the magnet or load-ſtone.

AIRE *de vent*, a point of the compaſs.

Avoir de l' AIRE, to have freſh way through the water.

Prendre AIRE, to get under way.

Amortir l' AIRE, to loſe head-way.

AISEMENT, a place of convenience in the gallery or head of a ſhip.

AISSADE, that part of the poop where the ſhip's breadth begins to diminiſh as it approaches the ſtern.

A LA BOULINE, cloſe-hauled. See ALLER *à la bouline*.

ALARGUER, to ſheer off; to ſail aloof from the ſhore or ſome contiguous object.

A L'AUTRE, an exclamation pronounced by the ſailors of the watch, at the ſtriking of the watch-bell, every half-hour, to ſignify to the pilot that they keep a good look-out. See the Engliſh term LOOK-OUT.

ALIDADE, the index of a nocturnal or ſea-quadrant. See OCTANT.

ALIZE', the reigning wind of a particular ſeaſon or region.

ALLEGE, a lighter or pram.

ALLE'GER *un vaiſſeau*, to lighten a ſhip by taking out a part of her lading.

ALLE'GER *le cable*, to buoy up the cable, by attaching barrels, or pieces of timber, to it lengthwiſe, ſo as to float it up from a rocky or foul ground: alſo to veer away the cable.

ALLER *à la bouline*, to ſail with a ſcant wind.

ALLER *à graſſe bouline*, to ſail with the wind upon the beam, or large.

ALLER *à la dérive*, to try under bare poles, or to try a hull. See DR'RIVE.

ALLER *au plus près du vent*, to ſail cloſe-hauled, or as near the wind as poſſible.

ALLER *de bout au vent*, to go head-to-wind, or right in the wind's eye.

ALLER *en courſe*, to cruiſe againſt, or in ſearch of, an enemy.

ALLER *entre deux écoutes*, to ſail right afore the wind, or with both ſheets aſt.

ALLER *vent largue*, to ſail large, or with a large wind.

ALLER *terre à terre*, to coaſt, or ſail along ſhore.

ALLONGE, a futtock, a general name given to the futtock timbers. See COUPLE and VARANGUE.

ALLONGE *de revers*, a top-timber.

ALLONGER *un vaiſſeau*, to lay a ſhip along-ſide of another.

ALLONGER *le cable*, to haul up a range of the cable upon deck.

ALLONGER *le vergue de civadiere*, to get the ſpritſail-yard fore and aft under the bow-ſprit.

ALLONGER *la terre*, to coaſt, or ſail along-ſhore.

ALMADIE, a ſmall African canoe, formed of the bark of a tree.

AMARQUE, the beacon, or buoy, of a ſhoal, flat, or ſand-bank.

AMARRAGE, the ground-tackling, or furniture for mooring a ſhip.

Ligne d' AMARRAGE, a feiſing or laſhing.

AMARRE, the order to faſten or belay a rope.

AMARRE *de bout*, the head-faſt; the head-cable, or hawſer with it's anchor.

AMARRER, to make faſt, ſeize, or belay.

AMATELOTER, to meſs together, to aſſociate as comrades or meſs-mates.

AME *d' un grand cordage*, the middle ſtrand of a four-ſtranded rope.

AMENER, to lower or ſtrike. Hence

AMENE, the order to ſtrike or lower away.

AMENER *une terre*, to make the land, &c.

AMIRAL, Admiral. Hence

AMIRAUTE', the admiralty.

AMOLETTES or AMELOTES, the bar-holes of any capſtern or windlaſs.

AMORCER, to prime a cannon or other fire-arm.

AMPOULETTE, the watch-glaſs, kept in the binacle.

AMURE' *à babord*, or *à ſtribord*, ſailing on the larboard or ſtarboard tack.

AMURER, to haul aboard the main or fore-tack.

AMURER *la grande voile*, to bring aboard the main-tack. Hence

AMURER *tout bas*, implies to get the tacks cloſe-aboard, or down as cloſe as poſſible.

AMURES *d' une voile*, the tacks of boom-ſails and ſtay-ſails.

ANCETTES, the bowline-cringles in the bolt-rope of a ſail.

ANCRAGE, the duty of anchorage. See MOUILLAGE.

ANCRE, an anchor.

ANCRE *d' affourche*, the ſmall bower.

ANCRE *ſecond*, the beſt bower.

ANCRE *à demeure*, a large anchor ſunk in a road or harbour, whereby to warp ſhips in and out, or ſecure them for a ſhort time.

ANCRE *à la veille*, an anchor which is a cock-bill, or ready to be ſunk from the ſhip.

ANCRE *de flot*, the flood-anchor.

ANCRE *de juſſant*, the ebb-anchor.

Maitreſſe-ANCRE, the ſheet-anchor.

ANCRE *de terre*, the ſhore-anchor, or that which lies towards the ſhore.

ANCRE *du large*, the ſea-anchor, or that which lies towards the offing.

ANCRE *de touë*, the ſtream-anchor.

*L'*ANCRE *a quitté*, *l'*ANCRE *eſt dérangée*, the anchor is a-trip, or a-weigh.

*L'*ANCRE *eſt au boſſoir*, the anchor is at the cat-head.

*A l'*ANCRE. See VAISSEAU *à l'ancre*.

*Boſſer l'*ANCRE. See BOSSER.

*Caponner l'*ANCRE. See CAPON.

*Faire venir l'*ANCRE *à pic*, or *virer à pic*, to heave a-peek upon the anchor.

*Gouverner ſur l'*ANCRE, to ſheer the ſhip to her anchor, when heaving a-head.

*Lever l'*ANCRE, to heave up the anchor, to weigh.

Chaſſer ſur les ANCRES, to drag the anchors, or bring them home.

Filer ſur les ANCRES. See FILER.

*Lever l'*ANCRE *avec la chaloupe*, to weigh the anchor with the long-boat.

*Lever l'*ANCRE *d'affourche*, the order to veer away one cable, and heave upon the other.

ANCRER, or *Jetter l'ancre*, *Mouiller l'ancre*, or ſimply *Mouiller*, *Donner fond*, *Mettre*,

Mettre, or *Avoir le vaiſſeau ſur le fer*, *Toucher*, *Laiſſer tomber l'ancre*. All theſe terms are ſynonymous, and ſignify to bring up, to anchor, to come to anchor, or to let go the anchor.

ANGE, chain-ſhot.

ANGUILLERES, limber-holes.

ANNEAU *pour attacher les vaiſſeaux*, a mooring-ring on a wharf, buoy, &c.

ANNEAU *de corde*, a ſlipping-nooſe, a running bowline-knot.

ANNEAUX *d' écoutilles*, or *boucles*, ring-bolts of the deck, &c.

ANNEAUX *d'étai*, the hanks of a ſtay-ſail. See DAILLOTS.

ANNEAUX *de ſabords*, the ring-bolts of the gun-ports.

ANORDIE, a northerly ſtorm peculiar to the gulph of Mexico, and the adjacent coaſt, at certain ſeaſons of the year, called by the Engliſh Creoles, a north.

ANSE, a cove, bight or ſmall bay.

ANSPECT, a handſpeck or lever.

ANTENNE, a lateen ſail-yard. See VERGUE.

ANTOIT, a crooked inſtrument of iron, uſed to bind the ſide-planks round the timbers in ſhip-building. The Engliſh artificers perform this operation by wraining-bolts and ſtaffs.

A PIC, a-peek; or perpendicularly above the anchor, with an extended cable.

APIQUER *une vergue*, to top a ſail-yard, or peek it up.

APLESTER, or APLESTRER, to unfurl and ſet the ſails, ready for putting to ſea.

APOSTIS, the row-locks of a galley.

APOTRES, the hawſe-pieces of a ſhip.

APPARAUX, the whole furniture of a ſhip, as the ſails, yards, blocks, anchors, cables, helm, and artillery. This term is therefore more comprehenſive than *Agrès*, although leſs ſo than *Equippement*, which, beſides the above, includes the ſeamen, ſoldiers, and their proviſions.

APPARCELADO, a flat, equal and uniform bottom of the ſea.

APPAREIL *de carene*, a general name for the machinery employed in careening a ſhip.

APPAREIL *de pompe*, the pump-gear, as the boxes, brake, ſpear, &c.

APPAREILLER, to make ready for ſailing, to get under ſail.

APPARTEMENT, a birth, cabin, or ſtore-room, in a ſhip.

APPOINTE', a mariner whoſe paſſage is paid by the ſtate, and who is not obliged to work in the ſhip that carries him.

APPROCHER *du vent*. See ALLER *à la bouline*.

AQUE, or ACQUE, a ſort of flat-bottomed lighter employed on the Rhine.

ARAIGNE'ES, the crow-feet of the tops.

ARAMBER. See ACCROCHER.

ARBALETE, a croſs-ſtaff or fore-ſtaff.

ARBALETRIERE, a platform or gangway, on which the ſoldiers ſtand to fire their muſquetry in a row-galley.

ARBORER *un mât*, to ſtep, or ſet up a maſt; to get any maſt an-end.

ARBORER *un pavillon*, to hoiſt and diſplay a flag or enſign.

ARBRE. See MÂT.

ARC, or *ligne courbe de l'éperon*, the curve of the prow or cut-water.

ARCANNE, a ſort of red chalk or oker, uſed by ſhipwrights in France, to mark the timber in hewing or forming it.

ARCASSE, the ſtern of a ſhip or counter; alſo the ſhell of a block.

ARCBOUTANT, a ſpar or ſmall maſt; more particularly, a boom to extend the bottom of a ſtudding-ſail, ſquare-ſail, or driver. See BOUTE DEHORS.

ARCBOUTANT *d'échafaud*, any prop or ſhore of a ſcaffold uſed in ſhip-building.

ARCEAUX, a name formerly given to the rails of the head. See LISSE *de poulaine*.

ARCENAL *de marine*, a royal dock-yard, together with its warren or gun-wharf.

ARCHE, a thin covering of lath or ſhingle, and ſometimes of rope, which caſes the ſhip's pump like a ſheath, to preſerve, and keep it tight.

ARCHIPOMPE, the pump-well.

ARCHITECTURE *navale*, the art of ſhip-building.

ARDENT, a corpoſant, or meteor, often ſeen at ſea in a ſtorm. See FEU *St. Elme*.

ARDENT, the quality of griping in the ſteerage, or carrying a weatherly helm.

ARER, or CHASSER, to chaſe. See CHASSER.

ARGANEAU, or ORGANEAU, a ring-bolt of the deck or ſides of a ſhip.

ARGANEAU *d'ancre*, the anchor-ring.

ARGOUSIN, a petty officer in the gallies, whoſe duty it is to fix on, or take off the ſhackles of the ſlaves, and to prevent them from eſcaping. It anſwers nearly to the corporal of a ſhip of war. See PREVÔT.

ARISER *les vergues*, to ſtrike the lower yards down upon the gunnel.

ARMADILLE, a ſmall ſquadron of Spaniſh frigates of war, uſually employed to guard the coaſt of New Spain, and prevent illicit trade.

ARMATEUR, a privateer or cruiſer. See CORSAIRE.

Vaiſſeau ARME' *en guerre*, a merchant-veſſel fitted for war, and furniſhed with a letter of mart to cruiſe againſt the enemy.

ARME'E *navale*, a naval armament, a fleet of ſhips of war.

ARMEMENT, the equipment or fitting out of a ſhip of war, or merchantman, for a cruiſe or voyage.

*Etat d'*ARMEMENT, a liſt of the officers intended to ſerve in a ſquadron of men of war.

ARMER *les avirons*, to ſhip the oars ready for rowing.

ARMER *un vaiſſeau*, to arm a ſhip for war, or equip her for a voyage.

ARMURIER, the armourer of a veſſel of war.

ARONDELLES *de mer*, a general name for ſmall veſſels, as brigs, ſettees, tartans, &c.

ARQUE', broken-backed or hogged; drooping at the ſtem and ſtern.

ARRET *de vaiſſeaux & fermetures de port*, a general or particular embargo laid on ſhipping.

ARRIERE, abaft; the hind part of a ſhip.

Faire vent ARRIERE, to bring the wind aft, or aſtern.

ARRIERE-GARDE *d'une armée navale*, the rear-diviſion of a ſquadron of veſſels of war.

Tomber en ARRIERE, to fall aſtern.

ARRIMAGE, the ſtowage or diſpoſition of the cargo in the hold.

ARRIMER, to ſtow the hold, to trim the ſhip by her ſtowage. Whence

ARRIMEUR, a ſtower.

ARRISER, or AMENER See AMENER.

ARRIVAGE, an arrival of merchandiſe in a port or haven.

ARRIVE, the order to put the helm a-weather, ſo as to bear away, or edge further to leeward.

ARRIVE *tout*, the order to put the helm hard a-weather.

*N'*ARRIVE *pas!* don't fall off! luff!

ARRIVE'E, bearing up, or the movement of veering or bearing away; alſo the angle of falling-off in trying.

ARRIVER, to bear away before the wind. Hence

ARRIVER *ſur un vaiſſeau*, to bear down on a ſhip.

ARRIVER *beaucoup*, to bear away large.

ARTILLE', or ARTILLIE', mounted with cannon: as, *vaiſſeau* ARTILLE' *de trente pieces*, a ſhip mounting thirty guns.

ARTIMON, the mizen-maſt, alſo the mizen itſelf.

ASPECT, the looming or perſpective view of the land from the ſea.

ASSECHER, *être à ſec*, to appear dry, as a rock or ſhore when the tide of ebb has retreated from it.

ASSEMBLER, to unite the ſeveral pieces of a ſhip, as by rabbeting, ſcarfing, ſcoring, tenenting, &c.

ASSUJETTIR, to fix a piece of timber firmly in it's place, in ſhip-building.

ASSURANCE, a contract or policy of inſurance.

*Pavillon d'*ASSURANCE, a flag or ſignal of peace.

ASSURER, to inſure a veſſel againſt the dangers of the ſea, &c.

ASTROLABE, a nocturnal.

A TRAIT *& à rame*, to advance with ſails and oars.

ATTEINDRE, to join a ſhip at ſea, either by accident or purſuit.

ATTELIER *de Conſtruction*, a ſhed or ſtore-houſe to contain ſhipwrights tools; alſo a loft or work-houſe near the dock; or a wharf, &c. for building ſea-veſſels. See CHANTIER.

ATTE'RAGE, a land-fall. Whence

ATTERIR, to make the land.

ATTERRISSEMENT, a mound or bank of earth thrown up near the margin of a river, by violent freſhes or ſtorms.

ATTOLONS, a cluſter of keys or ſmall iſlands, a chain of rocks.

ATTRAPE, pendent or guy of the relieving tackle uſed in careening a ſhip. See CORDE *de retenue*.

AVAL. Se AVAU *l'eau*.

AVANT, forward, afore, ahead.

*Etre de l'*AVANT, *ſe mettre de l'*AVANT, to be in the van of a fleet.

*Le vaiſſeau eſt trop ſur l'*AVANT, the veſſel is too much by the head.

AVANTAGE, the head, with its cutwater or prow. See EPERON.

AVANTAGE *du vent*, to-windward of ſome other ſhip.

AVANT-

AVANT-GARDE, the van of a fleet of veſſels of war.

AVARIE, the damage or loſs which a ſhip may have ſuſtained, by accidents or bad weather, in her voyage; alſo the duty paid for anchoring in a port.

AVASTE, avaſt.

AVAU *l'eau*, to ſail with the tide, to tide it up or down a river.

AUBALE'TRIERES, a ſort of balluſtrade erected on the ſides of a row-galley, to ſupport the rails of the gang-way, &c.

AUBIER, the ſap of timber.

AUBINET, or *Saint* AUBINET, No man's land.

AUGE *à goudron*, a tar-bucket.

AVIRON, an oar. See RAME.

AVITAILLEMENT, or AVICTUAILLEMENT, the ſea-victualling or proviſion of a ſhip.

AVITAILLEUR, or AVICTUAILLEUR, an agent-victualler, or contractor for ſupplying a ſhip with ſea-proviſions.

AULIRE, *awning* of canvaſs over the decks, to preſerve them from being cracked or ſplit by the heat of the ſun. It is ſupported by a range of ſtanchions. See TENDELET.

AU LOF, luff. The order from the pilot to ſteer nearer the wind. See OLOFE'E.

AUMONIER, the ſea-chaplain.

AVOCAT *Fiſcal*. See FISCAL.

AVOIER, to riſe, to freſhen; expreſſed of the wind when it has changed.

AVOIR *gagné*, to have fore-reached, or gained upon; ſpoken of a veſſel relatively to ſome other in ſight.

AVOIR *le pied marin*, to wear ſea-ſhoes; or to walk firm in a ſhip like a ſailor.

AVOIR *pratique*, to have pratic, or free intercourſe with the natives, after having performed quarantine.

AVOIR *vent arriere*, to have the wind aft.

AVOIR *vent de bout*, to have the wind right an-end, or a-head. See ALLER *de bout*, *&c.*

AU *plus pres de vent*, cloſe upon a wind. See ALLER *au plus pres*, *&c.*

AUSSIERE, or HAUSIERE, a hawſer or ſmall cable.

AUTAN, a guſt or ſquall of wind from the ſouth.

AUTARELLES, the thoules or rowlock-pins of a galley.

AVUSTE, or AJUSTE, a bend, or knot by which the ends of two ropes are faſtened together.

AVUSTER, to bend, or tie two ends of rope together.

B.

BABORD. See BAS-BORD.

BAC, a large flat-bottomed ferry-boat, for horſes, carriages, &c. See CHALAND.

BAC *à naviger*, a punt, or ſmall boat, uſed by the ſhipwrights to carry pitch, tar, &c.

BACALAS, cleats of various kinds.

BACALIAU, a name given to dried ſalt cod-fiſh.

BACASSAS, a ſort of lighter, ſomewhat reſembling an American periagua.

BACHE, or BACHOT, a yawl or wherry.

BACLAGE, a tier of boats moored alongſide of each other.

BACLER *les ports*, to fortify harbours by fixing chains or booms athwart their entrances; alſo to bar-in the gun-ports of a ſhip.

BAGUE, a ſmall grommet, or wreath fixed in the eye-let hole in a ſail.

BAIE. See BAYE.

BAILLE, an half-tub uſed to contain ſhot, grenades, matches, &c. alſo to hold water for cooling the guns in time of action, or to freſhen the ſalt proviſions.

BAJOU, or BAJON, a ſort of tiller.

BAISSER, to fall down with the tide; to drive or be carried along, according to the courſe of the ſtream.

BAISSER *le pavillon*. See AMENER.

BAISSER *les voiles*, to lower the ſails.

BALAI *du ciel*, the ſweeper of the ſky; a name given by ſailors to the north-weſt winds of America, which always produce clear weather.

BALANCER, *to balance*, that is, to contract, retrench, or fold up part of a ſail at one corner. It is peculiar to the mizen, and to main-ſails extended on a boom. See FANON.

BALANCIER *de lampe*, the rings by which the lamp is ſlung in the binacle.

BALANCIERS *de compas*, or *de bouſſole*, the gimbals of a ſea-compaſs, by which it is hung in equilibrium.

BALANCINES, lifts of the yards.

BALANCINE *de chaloupe*, the topping-lift of a boat's boom.

BALANT, the bight of a rope.

BALAYEUR *d'une navire*, the ſwabber or ſweeper of a ſhip, uſually called captain-ſwabber.

BALCONS, the galleries framed in the ſtern or quarter of a great ſhip.

BALISE, a ſea-mark; the beacon or buoy of a ſhoal, or dangerous channel.

BALLAST. See LEST.

BALON, a ſort of galley or barge of Siam.

BANC, a ſand-bank; alſo the bench, thwart, or beam of a boat.

BANC *à s'aſſeoir*, the ſeats or benches placed in the ſtern-ſheets of a boat or ſmall veſſel.

BANC *à coucher*, a ſort of folding bed-ſtead, or ſettee-bed.

BANCES *de rameurs*, the 'thwarts or ſeats of the rowers in a galley or row-boat.

BANCHE, a ridge or reef of rocks, under the ſurface of the water.

BANDE, the ſide of a ſhip; alſo a coaſt, or the ſide of a river. Hence

BANDE *du nord*, the northern ſhore, &c.

Vaiſſeau à la BANDE, a ſhip laid on the careen.

BANDE *de ſabords*, a tier of gun-ports on one ſide of a ſhip.

BANDER *une voile*, to line a ſail at the edges in order to ſtrengthen it.

BANDIERES, the flag or colours in the language of the gallies.

BANDINS, a ſort of ſtanchions or ſmall pillars, ornamented with ſculpture, and uſed to ſupport the after-canopy or awning of a row-galley.

BANDOULIERE, a cartridge-box for muſquetry, uſed by the marines or others who fight with ſmall arms.

BANNEAU. See BOUE'E.

BANQUE, a banker, or veſſel which fiſhes on the banks of Newfoundland, &c.

BANQUETTES, the ſtretchers of a galley or row-boat.

BAPTEME, the ceremony of ducking a ſailor the firſt time he paſſes the line, or tropics; from which he may be redeemed by paying a certain forfeit. Hence

BAPTISER, to duck, &c.

BAPTISER *un vaiſſeau*, to give a ſhip her name at the time of launching.

BARAT, or BARATERIE, the forfeiture or fine paid by the maſter of a ſhip and his crew, for embezzling part of the cargo, or ſuffering it to be damaged by neglect of ſtowage, &c.

BARBE. See SAINTE-BARBE.

BARBES *d'un vaiſſeau*, the entrance or fore-foot of a ſhip.

BARBEYER, to touch or ſhiver; expreſſed of a ſail when ſhaking in the wind.

BARCES, ſhort cannon, reſembling a falconet, formerly uſed at ſea.

BARCO-LONGO, a Spaniſh coaſting-boat.

BARDIS, water-boards or weather-boards.

BARDIS alſo implies the partitions occaſionally formed in the hold to ſeparate different ſpecies of grain, when the ſhip is laden therewith, &c.

BARGE, an old word for ſkiff or yawl.

BARIL, BARILLAGE, BARIQUE, ſmall caſks of different ſizes.

BARIL *de poudre*, a powder-caſk, containing an hundred pounds of gun-powder.

BARILLARD, the ſteward, or officer who has charge of the wine and water in the row-gallies.

BARIQUES, *à feu*, or *foudroyantes*, thundering-barrels, or caſks which contain the fire-pots in a fire-ſhip.

BARQUE, a ſettee, or two-maſted veſſel with lateen ſails.

BARQUE *à eau*, a watering-boat, or veſſel employed for carrying water.

BARQUE *d'avis*, an advice-boat.

BARQUE *de deſcente*, a ſort of lighter.

BARQUE, *de vivandier*, a proviſion-boat; a bum-boat.

BARQUE *droite*, the order to trim the boat upright, when ſhe heels.

BARQUE *en fagot*, a boat in frame; an aſſemblage of all the pieces of a boat, ready formed and put on ſhip-board, in order to build her at the place where ſhe may be required.

BARQUE *longue*, or *double chaloupe*, a ſort of pinace, or large long-boat.

BARQUEROLES, BARQUETTE, or BARCANETTE, a ſort of paſſage-boats.

BARRE, the bar of a harbour; alſo a chain of rocks.

BARRE *à bord*, hard over! the order to put the helm cloſe to the ſhip's ſide.

BARRE *d'arcaſſe*, a tranſom. See LISSES.

BARRE *de gouvernail*, the tiller of the helm.

BARRE *de gouvernail, toute à bord*, the whole force of the helm when the tiller is hard a-ſtarboard, or hard a-port.

Change la BARRE, the order to the ſteerſman to ſhift the helm.

Pouſſe la BARRE *à arriver*, no nearer, put the helm a-weather.

Pouſſe la BARRE *à venir au vent*, luff, or keep your luff.

BARRE *de pompe*, the pump-ſpear.

BARRE *de pont*, the deck-tranſom, parallel to the wing-tranſom.

BARRER, to ſecure; as, BARRER *un port*, to ſecure or defend a harbour, by fixing a boom acroſs the mouth of it.

BARRES, the booms or chains fixed acroſs a harbour, to ſecure it from the aſſaults of an enemy. See ESTACCADE.

BARRES *de cabeſtan*, the bars of the crab or capſtern.

BARRES *de contre-arcaſſe*, or *ſous barres d'arcaſſe*, the lower tranſoms.

BARRES *d'écoutille*, the hatch-bars.

BARRES *de hune*, *barreaux*, or *teſſeaux*, the frames of the croſs-trees and treſtle-trees.

BARRES *de panneaux d'écoutille*, the carlings, or ledges placed athwart under the covers of the hatchways.

BARRES *de porte*, the gun-port bars, by which their covers are faſtened in.

BARRES *de virevaut*, the hand-ſpecs, or bars of a windlaſs.

BARRILLARD. See BARILLARD.

BARROTE, full to the beams; an epithet given to a veſſel which is laden up to the beams of her deck. Whence

BARROTS, the beams of the higher decks.

BARROTINS, ledges, or ſmall ſpars, placed between the beams.

BARROTINS *de caillebotis*, ledges of the gratings.

BARROTINS *d'écoutilles*, the ſpurs of the beams, or the pieces which are joined to the beams, to fortify the deck a-breaſt of the hatchways.

BAS *de ſoie*, iron garters; a cant-term implying bilboes or fetters.

BAS *le pavillon*, the orders to haul down the colours.

BASBORD, the larboard or left ſide of a ſhip.

Vaiſſeau de BASBORD, a low built veſſel, whoſe deck extends not throughout her whole length.

BASBORD *tout*, hard a-port; the order to put the helm cloſe to the larboard ſide.

BASBORDES, or BASBORDUIS, the larboard-watch.

BASE *des ſabords*, the plank between the lower edges of the gun-ports and the wale.

BAS-FOND, a ſhoal or ſhallow.

BASSE, or BATTURE, a ridge of rocks, ſand-banks, &c. with breakers.

BASSE *eau*, low-water; the laſt of the ebb.

BASSES *voiles*, the courſes, or principal lower ſails of a ſhip, viz. main-ſail, fore-ſail, and mizen; and ſometimes mizen ſtay-ſail and fore-ſail.

BASSIN, a baſin, or baſon; alſo a ſmall harbour within a larger one.

BASTARD *de racage*, the parrel-rope.

BASTARDE, the largeſt ſail of a galley, which is only carried in fair weather and light winds.

BASTARDES, or BATARDELLES, ſquare-ſterned row-gallies.

BASTINGAGE, painted quarter-cloths, or waiſt-cloths; alſo the quarter nettings, &c.

BASTUDE, a peculiar ſort of fiſhing-net.

BATAILLE *navale*, a general or particular ſea-fight.

BATARDEAU, a ſort of dam.

BATAYOLLES, the quarter ſtanchions, or the ſtanchions which ſupport the rails of the waiſt and quarter.

BATAYOLETTES, ſmall ſtanchions, uſed to ſuſtain the awnings.

BATEAU, a general name for ſeveral kinds of boats; as,

BATEAU *déleſteur*, a ballaſt-boat or lighter.

BATEAU *pêcheur*, a fiſhing-boat, &c.

BATELE'E, the lading; or number of paſſengers, to be carried in a boat.

BATELIERS, the boat-men; the wherry-men.

BATIMENT, a veſſel or ſmall ſhip of any kind.

BATON *aſtronomique*, Jacob's ſtaff; an inſtrument formerly uſed for taking altitudes at ſea.

BATON *à meche*, a lint-ſtock. See BOUTE-FEU.

BATON *de flamme*, the ſtick which ſpreads the inner part of a pendent.

BATON *de giroüette*, the ſpindle or flag-ſtaff upon which the vane turns, at the maſt-head.

BATON *de juſtice*, a cobbing-board.

BATON *de pavillon*, or *d'enſeigne*, the flag-ſtaff, or enſign-ſtaff.

BATON *de vodel*, or *de guiſpon*, the handle of a long tar-bruſh or pitch-mop.

BATONNE'E *d'eau*, the quantity of water thrown out by a ſhip's pump at each ſtroke of the brake or handle.

BATTANT *de pavillon*, the fluttering or waving

waving of an enſign, as it flies in the wind.

BATTANT, fly of the enſign.

BATTERIE, the whole range of cannon placed on both ſides of any one deck in a veſſel of war.

BATTERIE *& demie*, a deck and a half of cannon; ſpoken of a frigate which carries cannon on her upper-deck and quarter-deck only.

Mette la BATTERIE *dehors*, the order to run the guns out.

Mette la BATTERIE *dedans*, run in the guns.

BATTRE *aux champs*, to ſound a march or chace at ſea.

BATTRE *à Diane*, to beat a reveille on the drum, as at day-break.

BATTRE *la marche*, to give the ſignal for ſailing.

BATTU, weather-beaten, ſhattered by a ſtorm, or diſabled in battle.

BATTURE. See BASSE.

BAU, a beam of the lower-decks.

BAU *de dale*, the hindermoſt or aftmoſt beam.

BAU *de lof*, the foremoſt beam in a ſhip.

BAU-*maître*, or *Maître*-BAU, the midſhip-beam, or the beam which is placed at the extreme breadth.

BAUX, ſtrong pieces of timber, extending acroſs a ſhip, from ſide to ſide, to ſupport the decks, and retain the ſides at their proper diſtances.

BAUX-*faux*, or *Faux*-BAUX, the beams of the orlop.

BAUDET, a ſawyer's frame, horſe, or treſtle.

BAUQUIERES, the clamps, or inner planks, by which the beams of a ſhip reſt upon her ſides.

BAYE, a bay or bight.

BAYES, or BAIES, *d'un vaiſſeaux*, the holes in the deck through which the maſts are let down, called alſo the partners.

BEAUPRE', the bowſprit. Whence

Petit BEAUPRE', the jib-boom.

BEAUPRE' *ſur poupe*, cloſe behind; ſpoken of one ſhip which is ſo near to the ſtern of another, in chace or otherwiſe, that the bowſprit of the former hangs over the ſtern of the latter.

BEC *de corbin*, a caulker's ſharp iron, or inſtrument, with which he cuts the old oakum out of a ſeam.

BE'LANDRE, a ſmall veſſel, carrying about eighty tons, and uſually navigated by three or four men. This is nowiſe like the Engliſh bilander.

BELLE, the main-deck, or waiſt. See EMBELLE.

BERCEAUX. See BIGOT.

BERCHE. See BARCES.

BERGE, a bold ſhore; alſo an artificial mound, or rampire, on the banks of a river, to prevent it from overflowing.

BERNE, a waſt of the enſign: hence

Mettre le pavillon en BERNE, to hoiſt the enſign with a waſt.

BESSON, the arching or convexity of the beams and decks. See TONTURE.

BESTION, the head, or ornamental figure, on the prow of a ſhip.

BIDON, or CANETTE, a can.

BIGOTS, the ribs of a parrel. See RACAGE.

BIGUES, certain props, or ſhores, let into the ports of a ſhip, to bear her up when ſhe reſts upon the ground; alſo the maſts of a ſheer-hulk.

BILANDRE, a ſmall merchant veſſel with two maſts, but differing from the Britiſh of that name.

BILLE, the beckets of the tacks and ſheets.

BILLER, to faſten a rope to a boom, in order to ride or tow a boat.

BILLOTS, dead-wood, or ſhort pieces of timber laid upon the keel, between the crotches, afore and abaft. See CONTREQUILLE.

BISCUIT, biſcuit, ſea-bread.

BISE, *vent de nord-nord-eſt*, the north-north-eaſt wind.

BISTORD, ſpun-yarn.

BISTORD *de trois fils*, three-yarn ſpun-yarn.

BITTES, the bits. Whence,

BITTER *le cable*, to bit the cable.

BITTON, a poſt fixed on a wharf, or pier, whereto to faſten a cable.

BITTONS, or TAQUETS, the top-ſail-ſheet bits.

BITTURE, a range of the cable drawn upon the deck, as ready for bitting.

BLEU, a temporary or acting officer, who performs the duty of another while the latter is ſick or abſent.

BLIN, a machine uſed to drive the wedges under a ſhip's bottom, when ſhe is to be launched.

BLOCQUER, or BLOQUER. See PLOCQUER.

BOITE *du gouvernail*, the rudder-caſe, or the box placed above the rudder-head, upon the deck, through which the tiller paſſes.

BOMBARDE, a bomb-veſſel, a ketch. See GALIOTE.

BOMBE', incurvated; an epithet given by ſhipwrights to crooked timber, fit for knees, crotches, or ſtandards.

BOMERIE, bottomry.

BON-FRAIS, a ſteady breeze, or freſh gale.

BONNACE, calm weather, with a ſmooth ſea.

BONNE *de nage*, ſwift of rowing; a fine rower.

BONNE-VOGLIE, a volunteer-rower in the gallies.

BONNEAU, a buoy. See BOUE'E and ORIN.

BONNETTE, the bonnet of a ſail; alſo a general name for ſtudding-ſails.

BONNETTE *lardée*, a bag or baſket charged with cinders, aſhes, and chopped oakum, to be uſed in the act of FOTHERING, which ſee.

Laſſer la BONNETTE, to lace on the bonnet of a ſail to its principal part.

BONNETTES, *en étui*, a general name for all ſtudding-ſails.

BON-TOUR, a favourable ſwing or turn: expreſſed of a ſhip when ſhe keeps her hawſe clear by winding the right way.

BORD, the ſide of a ſhip.

Renverſer, *tourner*, *changer le* BORD, to veer or tack.

Rendre le BORD, to anchor, to come to an anchor.

BORD *à bord*, along-ſide; ſpoken of two ſhips lying near to each other.

BORD *allonge*, or *qui allonge*, a long board; underſtood of a veſſel plying to windward.

BORD *à terre*, BORD *au large*, ſtanding in, or off, ſhore.

BORD *de la mer*, the ſea-coaſt, or ſhore.

BORD *ſur bord*, tack for tack, hank for hank.

Faire un BORD, to make a tack.

Bon BORD, a good board.

Courir même BORD *que l'ennemi*, to ſtand on the ſame tack with the enemy.

BORDAGE, the planks of a ſhip's ſide. Hence

Franc BORDAGE, the outſide planks.

BORDAGES *de fond*, the planks of the bottom or floor.

BORDAGES *pour recouvrir les ponts*, the planks of the decks.

BORDE *au vent*, & BORDE *ſous le vent*, haul aft the ſheets.

BORDE'E, one board in tacking; alſo a watch of part of the crew.

Faire le grande BORDE'E, to ſet a watch of half the ſhip's crew, when in any dangerous road, uſually called the ſea-watch.

Faire la petite BORDE'E, to ſet the quarter-watch.

BORDE'E *de canon*, all the guns on one ſide of a ſhip, uſually called a broadſide.

Envoyer une BORDE E, *donner la* BORDE'E, to diſcharge the broadſide upon an enemy.

Courir pluſieurs BORDE'ES, to ply to windward by boards, or by tacking.

BORDER, to plank a ſhip, or lay on her outſide planks; alſo to ſtand towards, examine, or obſerve the motions of an enemy at ſea.

BORDER *& braſſer au vent*, to trim the ſails by the wind.

BORDER *à quoin*, to plank a ſhip with clench-work, or plank-over-plank.

BORDER *en louvelle*, to lay on the planks level, or with their ſurfaces even.

BORDER *l'artimon*, to haul the mizen ſheet flat aft, or cloſe aft.

BORDER *les avirons*, to ſhip the oars ready for rowing.

BORDER *les écoutes arrieres*, to haul aft both ſheets of a ſail, for going afore the wind.

BORDER *les écoutes tout plat*, to tally the ſheets flat aft.

BORDER *un vaiſſeau*, to board or enter a ſhip, either in a hoſtile or friendly manner.

BORDER *une voile*, to trim a ſail by the tacks and ſheets.

BORDIER, lap-ſided; expreſſed of a ſhip which is ſtronger on one ſide than the other.

BORDS, leeches; borders or edges of a ſail, which are either ſloping or perpendicular.

BORE'AL, *vent* BOREAL, the northern wind.

BORNAGER, a method of ſhoving a great boat off from the ſhore, in a river, by fixing one end of the ſetting-pole againſt her ſide, whilſt the other bears upon the ground.

BOSPHORE, a ſtreight, or narrow channel; as the Thracian Boſphorus.

BOSSAGE, a name given by ſhipwrights to crooked timber, fit for knees, &c.

BOSSE, a powder-flaſk, uſed by privateers, in naval engagements.

Serre-BOSSE, the ſhank-painter.

BOSSEMAN, or *ſecond contre maître*, the boatſwain's mate.

BOSSER *l'ancre*, to ſtow the anchor upon the bow, &c. to hoiſt it up thereon by the cat and fiſh-tackles.

Bosser *le Cable*, to ſtopper the cable. From

BOSSES, ſtoppers of the ſhrouds or ſtays.

Bosses *à aiguillettes*, or *à rubans*, ſtoppers of the cable.

Bosses *de chaloupe*, or *de canot*, the boat's painter or mooring-rope.

Bosses *du boſſoir*, or *de bout*, the anchor-ſtoppers at the cat-head.

BOSSOIRS, the cat-heads of a ſhip.

BOT, a boat, of ſeveral kinds. Whence *Paquet*-Bot, a packet, or packet-boat.

BOUCHE, the mouth of a river. *Bouchaut* is alſo ſometimes uſed in this ſenſe.

Bouche *de canon*, the bore or caliber of a piece of ordnance.

BOUCHIN, the extreme breadth of a ſhip, from outſide to outſide.

BOUCHON *d'étoupe*, *de foin*, ou *de paille*, the wad of a cannon, formed of oakum, hay, &c.

BOUCHOTS, crawls, pens, or places incloſed by hurdles, for fiſhing on the ſea-coaſt.

BOUCLE, ſhackles or bilboes.

Mettre un matelot ſous Boucle, to confine a ſailor, or put him in irons.

En port Boucle', a harbour which is land-locked.

BOUDINURE *de l'arganeau*, the puddening of the anchor. See Embodinure.

BOUE'E, a buoy; a cloſe caſk, or block of wood, faſtened by a rope to an anchor, to aſcertain its ſituation with reſpect to the ſhip; or over banks, ſhallows, and rocks, as a warning to paſſing ſhips to avoid them.

Boue'e *de bout de mât*, a wooden-buoy, formed of an end of a maſt.

Boue'e *de barril*, a can-buoy, or nun-buoy.

BOUGE, incurvated; ſpoken of a piece of timber; alſo of the rounding or convexity of the decks and beams. See Tonnure.

BOUILLAR, a ſquall, a cloud charged with wind and rain.

BOUILLONEMENT, the rippling of a river, as it is diſcharged into the ocean.

BOULETS, balls or bullets of a cannon. Whence

Boulets *rouge*, red-hot bullets.

Boulets *à chaîne*, chain-ſhot.

Boulets *à branches*, or *à deux tetes*, bar-ſhot, or double-headed ſhot.

BOULIER, a ſort of fiſhing-net.

BOULINE, the bowline of a ſail.

Bouline *de la grand voile*, the main bowline.

Bouline *de revers*, the lee-bowline.

Faire courir la Bouline, to ſentence a criminal to run the gauntlope.

BOULINER. See aller *à la bouline*.

BOULINGUE, the royal-ſail.

BOULINIER, a ſhip that ſails cloſe-hauled. Hence *bon* Boulinier ſignifies a ſhip that plies well to windward.

BOULON, an iron bolt. See Cheville.

Boulons *d'affût*, the bolts of the gun-carriages.

BOUQUE, an entrance or channel between iſlands, or in narrow ſeas.

BOUQUETS, the fore-thwarts, or fore-ſheets of a boat.

BOURCER *un voile*, to carry a ſail clewed up, or hauled up in the brails. See Carguer.

BOURCET, a name given to the fore-ſail and fore-maſt of ſmall veſſels in the Engliſh Channel.

BOURGEOIS, the proprietor or owner of a ſhip.

Bourgeois is alſo the perſon who bargains with a ſhipwright to build a ſhip, called the contractor or ſhip's huſband,

BOURGUIGNON, an iſland of ice.

BOURRASQUE, a violent ſquall of wind.

BOURRE, the wadding of a charge in artillery.

BOURRELET, or Bourlet, the puddenings of the yards.

BOURSE, or Bource, the exchange, or place of reſort for merchants, mariners, &c. in a commercial ſea-port.

BOUSSOLE, or Compas *de route*, the ſea-compaſs.

Boussole *affolée*, an erroneous or defective compaſs. See Affole'e.

Boussole *de cadran*, an horizontal dial, with a magnetical needle.

BOUT *de beaupré*, a boom uſed for a bow-ſprit in ſmall veſſels.

Bout *de corde*, a rope's end, a ſhort piece of rope.

Bout *de cable*, piece of junk, or old cable.

Bouts *de corde*, a cat of nine tails, colt or rope's end for puniſhment.

Bout *de vergue*, the yard-arm, but more particularly that part of it which reaches beyond the upper corners of its reſpective ſail, to extend the reef.

BOUTE DEHORS, the ſtudding-ſail booms: this name is alſo given to a ſmall maſt

maſt erected in the tops, to hoiſt up and fix the caps on the maſt-head.

Boute dehors, is likewiſe a boom to puſh off ſome contiguous ſhip, particularly when ſhe approaches for any hoſtile purpoſe, as to board, &c. in which ſenſe it is uſually called fire-boom.

Boute *de lof*, or Boute-lof, the bumkin, or boom of the fore-tack.

Boute-feu, a lint-ſtock; alſo the name of an officer who is appointed to fire the cannon.

Boute-lof. See Bouter *de lof*.

Bouter *le cable au cabeſtan, & virer l'ancre*, to bring the cable to the capſtern, or to bring to the cable, and heave towards the anchor.

BOUTEILLES, the quarter-badges of a ſhip. See Balcons.

Bouteilles *de callebaſſe*, bundles of buoyant ruſhes, uſed in the exerciſe of learning to ſwim.

BOUTER, to bear off, to puſh, to join, &c.

Bouter *à l'eau*, to launch into the water, to put to ſea.

Bouter *au large*, to ſtand out into the offing.

Bouter *de lof*, to haul the wind; to trim ſharp.

BOUTES, large caſks, which hold freſh water for the uſe of a ſea-voyage.

BOUTEUX, or *Bout de quevre*, a ſort of fiſhing-rod.

BOUTONNER *la bonette*. See Bonnette.

BOYE. See Boue'e or Balise.

BOYER, a kind of Dutch ſloop.

BRAGUE, the brecching of a cannon uſed at ſea.

BRAI, pitch. Hence *braier un vaiſſeau*, is to pay the ſeams of a ſhip with hot melted pitch, after they are caulked with oakum. It is ſometimes mixed with other compoſitions, to nouriſh the timber, and is then called Brai *gras*.

BRANCHE *de ciprès*, beaconage; a ſmall duty paid by ſhipping in France, for keeping the beacons in repair.

Branche *ſuperieure d'une courbe*, the upper part of a knee or ſtandard.

Branche *d'embas*, the lower arm of a knee, &c.

BRANLE, a hammock.

Tendre les Branles, to ſling the hammocks.

Branle *bas*, or *fort* Branle, the order to laſh up and take down all the hammocks between decks, in order to prepare for engagement, or otherwiſe to clear the ſhip.

BRAS, the brace of a yard.

Tenir un Bras, to haul in and faſten the brace.

Bon Bras, braced to a large wind; braced-in.

Bras *de revers*, the lee-brace.

Bras, or Branches *d'ancre*, the anchor-arms.

BRASSE, a fathom, or meaſure of ſix feet.

BRASSEYAGE, the inner quarters of a yard between the ſhrouds.

BRASSER *à faire ſervir*, to fill the ſails after they have been braced a-back.

Brasser *au vent*, to brace the ſails in; or to haul in the weather-braces.

Brasser *les voiles ſur le mât*, to brace the ſails aback, or lay them to the maſt. This is alſo called Brasser *à contre*. See Coeffer.

Brasser *ſous le vent*, to brace to leeward, to brace-up the yards.

BRAYES, the tarred canvas coats of the maſt.

BREDINDIN, a ſmall ſtay-tackle, or burton, affixed to the main-ſtay.

BREF, a ſort of warrant or commiſſion from the ſtate, allowing a ſhip to purchaſe proviſions, conducting her ſafe on the coaſt, and exempting her from other duties.

BREGIN, a ſort of fiſhing-net, with very ſmall meſhes, uſed in the Mediterranean.

BREQUIN, or *Ville*-Brequin, a ſhipwright's wimble to bore wood.

BRESSIN, a tackle-hook. See Palan.

BREVET, Connoissement, Police *de chargement*, a bill of lading.

Brevet *d' officier*, the commiſſion or warrant of an officer.

BREUILLER. See Carguer.

BREUILS. See Cargues, Martinets. and Garcettes.

BRIDER *l'ancre*, to ſhoe the anchor *.

* This manœuvre, according to the beſt of my information, is very little known amongſt our mariners; it is performed by lining, or doubling, the flukes of an anchor, with two pieces of plank, to ſtrengthen and prevent them from turning in a ſoft and oozy ground.

BRIEUX, a term uſed in Britanny to expreſs the ſalutation of ſtriking the flag, or top-ſails, to an admiral, &c. Alſo a duty paid for entering a harbour.

BRIGANTIN, a ſmall light veſſel, navigated by oars and ſails; but differing extremely from the veſſel known in England by the name of brig or brigantine.

BRIMBALE, the brake or handle of a ſhip's pump.

BRION, the fore-foot, placed at the extremity of the keel forward.

BRIS, a duty formerly paid to the lord of the manor, by thoſe who ſuffered ſhipwreck thereon. This unjuſt exaction is now totally aboliſhed. See DEBRIS.

BRISANT, or BRISANS, a ſhelf or ridge of rocks near the ſurface of the water, and diſtinguiſhed by the breakers that burſt over it; it is alſo applied to the breakers themſelves.

BRISE, a freſh gale or breeze; alſo the trade-winds, or ſea-breezes between the tropics.

BRISE *carabinée*, a violent wind or ſquall.

BRISER, to ſplit, or daſh forcibly againſt a rock or ſhelf; expreſſed of a ſhip when ſhe is ſtranded.

BRISES, the land-winds which blow during the night in the Weſt-Indies, &c.

BROCHETER, to give the ſcantlings of the ſeveral pieces of a ſhip's frame.

BROU, the bark of the cocoa, of which the Indians form the cordage uſed in their ſhipping.

BRUINE, ſmall drizzling rain.

BRULOT, a fire-ſhip.

BRUME, a miſt or fog at ſea.

Tems EMBRUME', or *couvert de brouillard*, thick miſty weather.

BUCENTAURE, a ſort of galley uſed by the ſtate of Venice, when the doge performs the annual ceremony of eſpouſing the ſea.

BUCHE, a herring-buſs, or ſmall fly-boat uſed in the herring-fiſhery.

BULLETIN, a certificate given to ſea-officers and ſailors, when they are regiſtered in a port, to teſtify their qualities, age, privileges, and time of ſervice.

BURINS. See TAPPES.

BUTIN, the pillage or plunder of a prize taken from an enemy.

C.

CABANE, a flat-bottomed paſſage-boat, with a deck, navigated on the river Loire.

CABANES, the cabins or apartments wherein the officers and ſailors ſleep or meſs aboard a ſhip. See TEUGUE.

CABESTAN, the capſtern or crab of a ſhip.

Virer au CABESTAN, to heave at the capſtern.

CABILLOT, a toggel; alſo a wooden pin for belaying ropes.

CABLE, the cable; alſo a meaſure of 120 fathoms, called by the Engliſh ſeamen a cable's length.

CABLE *à pic*, the ſituation of the cable when the ſhip is cloſe a-peek upon her anchor.

CABLE *de touei*, a ſtream-cable, or large hauſer.

CABLE *tourné*, or *qui a un tour*, or *demi-tour* a foul hawſe; a croſs or elbow in the hawſe.

Bitter le CABLE, to bit the cable, or clap it on the bits. See BITTER.

Couper, or *tailler le* CABLE, to cut the cable in the hawſe.

Donner le CABLE *à un vaiſſeau*, to give a cable's end to another ſhip; to take a ſhip in tow at ſea.

Filer du CABLE, to ſlack out or veer away the cable. See FILER.

Laiſſer traîner un CABLE *ſur le ſillage du vaiſſeau*, to drag a cable in the ſhip's wake in order to retard her courſe, when ſhe is chaſed by a veſſel of inferior force, which is decoyed, by this ſtratagem, till within reach of her cannon.

Lover un CABLE, to coil a cable.

CABLEAU, the painter, or mooring-rope of a boat.

CABLER, to make large ropes or cables.

CABOTAGE, the art of a coaſting-pilot; as the knowledge of the ſhore, the tides, ports, rivers, capes, ſoundings, &c. on any particular coaſt.

CABOTER,

CABOTER, to coaſt, or ſail along the ſhore between cape and cape.

CABOTIERE, a barge; alſo a large flat-bottomed lighter with a long rudder.

CABRE, a ſort af gin, or machine reſembling the ſheers of a ſhip, and uſed to heave up pieces of timber on the wharf of a river.

CABRIONS, certain wedges fixed under the train of a gun-carriage, to ſecure the cannon when the ſea is very high.

CADENES *de haubans*, the chains of the ſhrouds, the chain-plates.

CADRE, a bed-frame, reſembling the frame of a cott, wherein the ſea-officers ſleep: theſe are uſually bottomed with ſmall cords by the French, and ſlung by the corners without a cott, or cover of canvas.

CAGE. See HUNE.

CAGOUILLE, a ſort of volute or ornament fixed on the extremity of the prow of polacres, xebecs, tartans, as exhibited in fig. 12. plate XII.

CAIC, the yawl or ſkiff of a galley; alſo a ſmall Poliſh veſſel, navigated on the Black Sea.

CAIES, a ridge of rocks, or ſand-banks; called in the Weſt Indies, keys.

CAILEBOTIS, the gratings of the hatches.

CAJOLER, to ply to windward with the tide; to work by ſhort tacks.

CAISSE *de poulie*. See ARCASSE and MOUFFLE.

CAJUTES, the cabins or bed-places, which are ranged along the inſide of a merchant-ſhip, for the common ſailors, &c.

CALANGE, or CALE, a ſmall harbour behind a hill, or riſing ground, on the ſea-coaſt.

CALCETS, the cheeks or hounds of the maſt, which ſupport the brazen blocks in a galley.

CALE, the hold of a ſhip; likewiſe the lead of a fiſhing-line uſed to ſink the bait.

Donner la CALE, to duck or plunge an offender from the yard-arm into the ſea, by way of puniſhment.

Donner la grand CALE, to keel-haul; a puniſhment peculiar to the Dutch.

CALE-BAS, a down-haul, or down-haul tackle.

CALE-HAUBAN, a breaſt back-ſtay for the top-maſt or top-gallant-maſt.

CALER, to ſink down in the water; alſo to founder at ſea.

CALER *les voiles*. See AMENER.

CALER alſo ſignifies to quoin or wedge up any thing.

CALE-TOUT, the order to let go amain, or at once.

CALFAS, or rather CALFAT, caulking.

CALFAT, or CALFATEUR, a caulker.

CALFAT alſo ſignifies a caulking-iron.

CALFAT *double*, a caulker's making-iron.

CALFATER, to caulk a ſhip or boat.

CALFATIN, a caulker's boy, who ſpins or twiſts his oakum.

CALIBRE, the bore of a cannon or other fire-arm.

CALIBRE *de vaiſſeau*, the model of a ſhip.

CALIORNE, a winding-tackle; a tackle formed by a rope paſſing through two three-fold blocks.

CALME, calm, a ceſſation of wind.

CALME *tout plat*, a dead calm, or a flat calm. Whence

CALMER, to become calm.

CAMBRER, to bend the planks or boards of a ſhip to their proper curve, by ſtoves, &c.

CAMPAGNE *ſur mer*, a voyage, a cruiſe at ſea during a ſeaſon, or limited ſpace of time.

CANAL, a canal, ſtreight, or channel.

CANAL *de l'étrave*, the concavity in the top of the ſtem, wherein the bowſprit reſts.

CANAL, or CREUX *autour d'une poulie*, the channel of a block through which the rope paſſes, over the ſheave or wheel.

CANDELETTE, the fore-tackle. See CAPION.

CANEFAS, canvas or ſail-cloth. See TOILE.

CANON, a cannon, or piece of ordnance.

CANON *à la ſerre*, a gun houſed athwart, with the top of its muzzle bearing againſt the upper edge of the port.

CANON *allongé contre le bord*, a gun houſed fore-and-aft, cloſe to the ſhip's ſide, abreaſt of its own port.

CANON *aux ſabords*, a gun levelled to the point-blank range.

CANON *de courſier*, the bow-chace of a row-galley.

CANON *démaré*, a cannon drawn in to be charged.

CANON *détapé*, a cannon with its tompion taken out.
CANON *moindre*, a cannon whoſe calibre is not proportioned to the thickneſs of the metal.
CANON *renforcé*, a cannon whoſe breech is reinforced, i. e. thicker than the calibre, which is the uſual dimenſion.
CANONNER, to cannonade; to fire a broadſide.
CANONNIER *de vaiſſeau*, the gunner of a ſhip.
Second maître CANONNIER, the gunner's mate.
CANONNIERS, the quarter-gunners or artillery-men of a ſhip.
CANOT, a ſhip's boat, cutter, or yawl.
CANOT *de bois*, a canoe.
CANOT *jaloux*, a crank-boat.
CANOTS, Indian canoes of various kinds.
CANTANETTES, the light-ports in the ſtern of a galley.
CANTIBAI, a name given by ſhip-wrights to timber which is full of cracks, or ſhakes, &c.
CANTIMARON. See CATIMARON.
CAP, the head or prow of a ſhip.
Porter le CAP *ſur l'ennemi*, to bear towards the enemy.
On eſt le cap? how is the head? how does the ſhip wind?
CAP, a cape, head-land, or promontory.
Doubler le CAP, to double, or ſail round, a cape.
CAP *de more*. See CHOUQUET.
CAP *de mouton*, the dead-eye of a ſhroud or ſtay.
CAP *de mouton à croc*, an iron-bound dead-eye, with a hook.
CAP *de mouton de martinet*, the dead-eye of a crow-foot. See MOQUE.
CAPACITE' *d'un vaiſſeau*, the burthen or tonnage of a ſhip.
CAPE, or GRAND PACFI, the mainſail.
Capeyer, or *Etre à la* CAPE, to try under the mainſail, or ſome other of the courſes, when all the topſails, &c. are furled.
CAPELAGE, the eye or collar of a pair of ſhrouds or backſtays.
CAPELER *les haubans*, to fix the ſhrouds on the maſt-head.
CAPION, the ſtem-poſt of a galley. See RODE.
CAPION *de proue*, the ſtem of a galley.
CAPION *à capion*, from ſtem to ſtern.
CAPITAINE *d'un vaiſſeau de guerre*, the captain of a ſhip of war.
CAPITAINE *d'armes*, a captain of marines.
CAPITAINE *du hautbord*, the captain of a ſhip of the line.
CAPITAINE *du petit etât*, a maſter and commander.
CAPITAINE *de ports*, the commandant of a detachment of marines, appointed to guard a dock-yard, and the ſhipping in the harbour.
CAPITAINE *des matelots*, an officer reſembling our captain of the fore-caſtle.
CAPITAINE *en ſecond*, the ſecond captain, or firſt lieutenant of a ſhip of war.
CAPITAINE *garde-côte*, a captain of the militia appointed to guard the coaſts.
CAPITANE, or CAPITAINESSE, a name formerly given to the principal galley of France.
CAPLANIER, a cod-fiſher, a veſſel appointed to fiſh and cure cod; alſo the men employed in this ſervice.
CAPON, the cat-tackle.
CAPONNE, the order to cat the anchor.
CAPONNER *l'ancre*, to cat the anchor, or draw it up at the cat-head.
CAPOSER, to bring a ſhip to, with her helm a-lee.
Faire CAPOT, to cant, over-ſet, or turn topſy-turvy.
CAPRE, a veſſel of war, or armed ſhip.
CAQUE *de poudre*, a powder-caſk; alſo a herring-barrel; whence
CAQUEURS, ſailors appointed to cure and barrel the herring.
CARACORE, an Indian veſſel, peculiar to the iſland of Borneo.
CARAMOUSSAIL, a merchant-ſhip of Turkey, conſtructed with a very high ſtern.
CARAQUE, a name given by the Portugueſe to ſhips employed in the Brazil and the Eaſt-India trade.
CARAVELLE, a ſmall ſquare-ſterned Portugueſe veſſel, navigated with lateen ſails; and eſteemed very expeditious.
CARCASSE, the carcaſe or ribs of a ſhip, before the planks are laid on, or after they are ripped off.
CARENAGE, a careening wharf.
CARENE, the outſide of a ſhip's bottom. This word is ſometimes uſed for the keel.
CARENE *entier*, a thorough careen, by which a ſhip is heaved keel-out.
Demie CARENE, a parliament-heel, or boot-topping.

CARENER, *donner la carene à un vaiſſeau*, to careen or heave down a ſhip with careening tackles to a wharf or pontoon.

CARGADOR, the perſon who procures a freight or voyage for a merchant ſhip.

CARGAISON, the cargo, or articles of a ſhip's lading.

CARGUE *à veu*, a ſlab-line.

CARGUER, to clue up a ſail, or haul it up in the brails.

CARGUER *l'artimon*, to brail up the mizen.

CARGUER *le point de la voile qui eſt ſous le vent*, to haul up the lee-clue-garnet, or goose-quill of a ſail.

CARGUES, a general name for the brails of a ſail, comprehending the clue-lines, bunt-lines, leech-lines, &c.

CARGUES *d'artimon*, the brails of the mizen.

Mettre les baſſes voiles ſur les CARGUES, to haul-up the courſes, or haul the courſes up in the brails.

Mettre les huniers ſur les CARGUES, to clue-up the top-ſails.

CARGUES-*boulines*, the leech-lines.

CARGUES *de fond*, the bunt-lines.

CARGUES *de hune*. See RETRAITE *de hune*.

CARGUES *deſſous le vent*, the lee-brails, *&c.*

CARGUES *du vent*, the brails to windward, or weather-brails.

CARGUES *point*, the clue-garnets, or clue-lines.

CARGUEUR, the top-block of a top-gallant-maſt.

CARLINGUE, or *contre quille*, the kelſon.

CARLINGUE *de cabeſtan*, the ſtep of the capſtern.

CARLINGUE *de pied de mât*, the ſtep of a maſt.

CARNAU, the lateen foreſail of a ſettee or polacre.

CARREAU. See LISSE *de platbord*.

CARTAHU, girt-line, or gurt-line.

CARTE *marine*, a chart or map of the ſea, repreſenting it's banks, rocks, ſhoals, bays, havens, &c.

CARTE *plate*, or *au point commun*, the plain chart.

CARTEL, a ſhip employed to exchange the priſoners of any two hoſtile powers; or to carry requeſts and propoſals from one to the other.

CARTON, a book containing a collection of charts in folio.

CARTOUCH, a cartridge to contain a charge of powder for a cannon or other fire-arm.

CATARACTES, water-falls.

CATIMARON, a catamaran, or Indian raft.

CATURES, armed veſſels of Bantam.

CAYES, keys, or chains of rocks, nearly even with the ſurface of the ſea.

CEDRE, cedar-wood, which is eſteemed excellent for ſhip-building.

CEINTES, a name formerly given to the wales. See PRECEINTES and LISSES.

CEINTRER, to frap a ſhip, or paſs turns of a cable round the middle of the hull of a ſhip, to ſupport her in a ſtorm.

CENTRE *de peſanteur*, the center of gravity.

CERCLE *d'étambraie*, or *de cabeſtan*, an iron hoop that lines the hole of the deck, within which the capſtern turns upon it's ſpindle.

CERCLES *de boute-hors*, the ſtudding-ſail boom-irons.

CERCLES *de hune*, the top-rails, which formerly ſurrounded the tops, when circular.

CERCLES *de pompe*, the iron hoops fixed on the top of the pump to ſtrengthen it.

CHABLEAU, a tow-line, a large warp.

CHABLEUR, a water-officer, who has the care of the wherries.

CHAÎNES *de port*, the boom or chain of a harbour. See BARRE.

CHAÎNES *de vergues*, the top-chains.

CHALAND, or BAC, a ſort of lighter uſed on the Loire.

CHALINGUE, a light high-built Indian veſſel, formed without nails.

CHANDELIER *de fanal*, the iron brace, or crank, with it's ſtool, which ſupports the poop-lanthorn.

CHANDELIER *de pierrier*, the iron crutch of a ſwivel-gun; alſo the wooden ſtock, hooped with iron, that contains the ſocket wherein it reſts and traverſes.

CHANDELIERS *de chaloupe*, the crutches of a boat, which ſuſtain the main-boom, or the maſt and ſail, when they are lowered, for the conveniency of rowing.

CHANDELIERS *d'échelle*, the ſtanchions which ſupport the entering ropes at the gangway.

CHANDELIERS *de liſſes*, the iron crutches, or double ſtanchions, of the quarters, &c. fixed in a veſſel of war, to extend the double nettings. See FILARET.

CHANDELIERS, *de petit batiment*, the crutches fixed on the ſtern or quarter of a boom-ſail veſſel. See CHANDELIERS *de chaloupe*.

CHANGER,

CHANGER, in a naval ſenſe, generally implies to tack, ſhift, or relieve; as,

CHANGER *de bord*, to tack or veer. See VIRER *de bord*.

CHANGER *l'artimon*, to ſhift over the mizen to the other ſide.

CHANGER *le quart*, to change or relieve the watch.

CHANGER *les voiles*, to ſhift the ſails; to brace about; to jibe.

CHANGER *les voiles, d'avant, & les mettre ſur le mât*, to brace the head-ſails to the wind, to lay the head-ſails to the maſt.

CHANTIER, the ſtocks upon which a ſhip is laid down to be built.

CHANTIER, or ATTELIER, alſo ſignifies a ſhipwright's yard or wharf.

CHANVRE, hemp employed to make the ſails and cordage of a ſhip.

CHAPE, the inner box of a ſea-compaſs.

CHAPEAU *de maître*, a gratuity or due, required by the maſter of a ſhip for each ton of goods which his veſſel carries.

CHAPELLE, the act of chapeling of a ſhip.

Faire, or *pendre* CHAPELLE, to chapel a ſhip; to build a chapel at ſea.

CHARGE, the cargo, burthen, or lading of a ſhip. This is alſo called *chargement*.

Etre CHARGE' *a la côte*, to be upon or near a lee-ſhore.

CHARGEOIR, or *lanterne à charger*, a gunner's ladle.

CHARGER, to load a ſhip, or take in her cargo.

CHARGER *en grenier*, to load a ſhip in bulk.

CHARGER *la pompe*, to fetch the pump.

CHARGEUR-MARCHAND, or MARCHAND-CHARGEUR, the merchant who loads a ſhip, or freights her to convey a cargo to ſome diſtant place.

CHARNIER, a ſkuttled caſk, uſed to contain water for the ſhip's crew to drink on the upper deck.

CHAROI. See CHARROI.

CHARPENTIER *de navire*, a ſhipwright; alſo the carpenter of a ſhip.

CHARTE-PARTIE, a charter-party; alſo a convention made by a company of merchants who trade together.

CHASSE, a chace at ſea, or flight of one veſſel from another who purſues her.

Prendre CHASSE, to ſtand away from; to fly from.

Donner CHASSE, or CHASSER, to give chace, to purſue.

Soutenir CHASSE, to make a running fight; to fight in retreat.

CHASSE *de proue*, the head-chace, or bow-chace. See PIECE *de chaſſe*.

CHASSE, a preſent of money, or wine, given by the merchant to the maſter of a trading-veſſel, partly for himſelf, and partly to be diſtributed amongſt the ſhip's crew on a proper occaſion.

CHASSER *ſur ſa ancre*, to drag the anchor; to bring the anchor home.

CHAT, a cat, or ſhip ſo called.

CHATEAU, a general name for the fore-caſtle and quarter-deck of a deep-waiſted veſſel.

CHATEAU *d'arriere*, or *de poupe*, the quarter-deck and poop.

CHATEAU *d'avant*, or *de proue*, the fore-caſtle.

CHATTE, a ſmall two-maſted veſſel, formed like a cat or Norwegian pink.

CHAUDERON *de pompe*, a plate of lead or copper, perforated with holes, to cover the bottom of a pump.

CHAUDIERE, the great copper, or kettle, in which the proviſions for the ſailors are boiled.

CHAUDIERE *à brai*, or *à goudron*, a pitch-kettle.

CHAUFFAGE, breaming-fuel, furze, or faggots, uſed to burn the dirt from off a ſhip's bottom at the time of breaming.

CHAUFFER, to bream a ſhip, or burn the filth from off her bottom.

CHAUFFER *les ſoutes*, to dry or ſeaſon the bread-room, in order the better to preſerve the biſcuit during a ſea-voyage.

CHAUFFER *un bordage*, to bend a plank, or make it pliant by heating it.

CHAVIRER, or TREVIRER, to overſet, capſize, or turn any thing topſy turvy.

CHEBEC, or CHABEK, a xebeck.

CHEF, the ſtem or head of a boat.

CHEF is alſo a junk, or end of a cable, uſed as an headfaſt to a ſhip, when ſhe is ready to be launched, and which is to retain her after ſhe floats, till her anchor is either carried out, or let fall from the bow.

CHEF *d'eau*, high-water. See HAUTE *marée*.

CHEF *d'eſcadre*, a commodore.

CHEMIN, a range of ſkeeds laid by ſea-

men, whereon to roll full caſks either aſhore or aboard.

CHEMIN *du halage*, a path on the ſide of a river, or canal, for horſes to track boats and veſſels along the ſtream.

CHEMISE *à feu*, or SOUFRE'E, a curtain, or piece of old canvas, dipped in a compoſition of oil, petrol, camphire, and other combuſtible materials, and nailed to the planks of an enemy's ſhip, when it is intended to ſet her on fire. See FIRE-SHIP.

CHENALER, to find out a channel by the help of buoys, or of ſounding, where the water is ſhallow.

CHENETS, a ſort of iron claws uſed to bend the planks of a ſhip by fire.

CHERSONESE, a peninſula.

CHEVALET, a roller for paſſing the cables from one place to another.

CHEVAUCHER, to ride, or be fayed upon; a term in ſhip-building.

CHEVET, ſmall cuſhions or bags, filled with tarred ropes, to prevent the ſtays from galling the maſts.

CHEVET *de traverſin des bittes*, the lining or doubling of the bits, which is employed to prevent the cable from galling them when the ſhip rides with a great ſtrain.

CHEVILLE, an iron bolt, of which there are ſeveral ſorts uſed in the conſtruction of a ſhip: as,

CHEVILLE *à boucle*, a ring-bolt.

CHEVILLE *à boucles & à goupilles*, a ring-bolt which is ſecured by a forelock.

CHEVILLE *à croc*, a hook-bolt for the gun-ports.

CHEVILLE *à goupilles*, a forelock-bolt, or bolt fitted to receive a forelock.

CHEVILLE *à grille & à boucles*. See GOUJON.

CHEVILLE *à œilettes d'affût*, the eye-bolts of the gun carriages.

CHEVILLE *à tête de diamant*, or *à tête ronde*, a round-headed bolt.

CHEVILLE *à tête perdue*, a bolt whoſe head is ſunk into the timber where it is driven.

CHEVILLE *d'affût*, a gun-carriage bolt.

CHEVILLE *de fer à charger le canon*, langrage-ſhot.

CHEVILLE *de pompe*, the ſhort pump-bolt, or bolt which connects the brake with the ſpear.

CHEVILLE *de potence de pompe*, a long pump-bolt, or bolt which faſtens the brake to the checks or ears of the pump.

CHEVILLER, to bolt a ſhip, or drive the bolts which faſten one part to another.

CHEVILLOTS, belaying-pins, fixed in the rails of ſmall veſſels.

CHEVRE, a gin, or triangle with pullies.

CHICAMBAUT, a bumkin. See BOUTELOF.

CHICANER, to claw off, as from a rock, lee-ſhore, &c.

CHICANER *le vent*, to ply or beat to windward. See LOUVIER.

CHIORME, or rather CHIOURME, the troop or crew of ſlaves belonging to one row-galley, together with the volunteers who row at the oars.

CHIRURGIEN *major*, the ſurgeon of a ſhip.

CHOPINE, or CHOPINETTE *de pompe*, the lower pump-box.

CHOQUE. See TOUR ET CHOQUE.

CHOQUER *la tournevire*, to ſurge the capſtern.

CHOQUER *la bouline*, to check the bowline.

CHOSES *de la mer*, or *du flot*, wreck, or whatever is found floating at ſea, or within certain limits of the ſea-coaſt.

CHOUQUET, a cap of the maſt-head.

CHUTE *des voiles*, the depth of the ſails.

CIEL *embrumé*, a cloudy, heavy, or dark ſky.

CIEL *fin*, fine weather, a clear ſky.

CINGLAGE, or SINGLAGE, the run of a ſhip for twenty-four hours, or the courſe and diſtance ſhe has made between noon and noon.

CINGLAGE alſo imports the pay or wages of mariners.

CINGLER, or SINGLER, to ſail with a favourable wind on a particular courſe.

CINQUENELLE, or CINCENELLE, a general name for the tackling of the great guns, by which they are faſtened to the ſhip's ſides, &c.

CINTRAGE, or CEINTRAGE, a name given to any kind of laſhing, or frapping, which ſurrounds the object it is intended to ſecure.

CINTRER, or CEINTRER *un vaiſſeau quand il largue*, to frap a ſhip.

CIVADIERE, the ſprit-ſail.

CLAIRON, a clear ſpot in a cloudy ſky.

CLAMP, a ſheave, or ſmall wheel, placed in a mortiſe, as in the foot of a top-maſt, to paſs a rope through.

CLAN, a mortiſe or hole cut in a plank, maſt, &c. lengthwiſe, to admit a ſheave.

CLAN,

CLAN, or CLAMP *de beaupré*. See COUSSIN.

CLAN is alſo a ſort of breaſt-hook in a large lighter.

CLAPET *de pompe*, the clapper of a pump-box.

CLAPETS, leathern flaps nailed on the outſide of the ſcuppers, inſtead of ſcupper-hoſes.

CLASSE, a diviſion of pilots, gunners, ſeamen, &c. engaged to ſerve in any naval armament during a limited time, after which they are relieved by another diviſion ſent from the ſhore.

CLAVETTE, or GOUPILLE, a forelock.

CLEF. See CHEF.

CLEF *de beaupré*, or BARROT *de coltis*, the collar-beam, which is raiſed a little above the ſecond deck, to fortify the bowſprit.

CLEF *de pierrier*, the forelock of a pedrero or ſwivel-gun.

CLEF *de pompe*. See CHEVILLE *de potence*.

CLEF *de ton du mât*, or CLEF *de mât de hune*, the iron or wooden fid of a topmaſt.

CLEES *de guindas*, the cheeks of the windlas.

CLERC *de guet*, the clerk who aſſembles and muſters the militia appointed to guard the ſea-coaſt.

CLERCS *de ſecretaire*, or *de greffe de l'amirauté*, the meſſengers of the admiralty.

CLINCAR, a ſort of flat-bottomed clinker-built pram, or lighter, of Sweden and Denmark.

CLOISSON, a range of ſtanchions uſed to ſupport the bulk-heads, or partitions, which ſeparate one cabin from another.

CLOPOTEUSE, turbulent or agitated; an epithet given to the ſea when it runs high.

CLOU, an iron ſpike, or nail, of any ſize.

CLOUS *à river*, a rivet, or riveting-nail to be clenched at both ends.

CLOUS *des ſabords*, doubling-nails, to line the gun-ports.

CO-BOURGEOIS, a copartner in, or part-owner of, a ſhip.

COCHES *d'affût de bord*, the notches or ſteps of the carriage of a ſhip-cannon.

COEFFE'E, laid aback.

Mettre tout à COEFFEE, to lay all flat aback.

COEFFER, to back a ſail, to lay it to the maſt.

COFFRE *à feu*, a powder-cheſt, fixed on the deck or ſide of a ſhip, to be diſcharged upon a boarding enemy.

COFFRE *à gargouſſes*, a cartridge cheſt, which contains the filled cartridges in a ſhip's magazine.

COFFRE *de bord*, a ſea-cheſt, a ſailor's cheſt.

COINS *d'arrimage*, the quoins or coins uſed in the ſtowage of a ſhip's hold, &c.

COINS *de chantier*, the wedges driven between the blocks and the keel, when a ſhip is building.

COINS *de mât*, the wedges of a maſt, by which it is confined in the cap or partners.

COITES, the ways, or cradles, upon which a ſhip gradually deſcends, when ſhe is firſt launched into the water.

COITES *du guindas*, the cheeks or bits of the windlas. See CLEF *du guindas*.

COLLET *d'étai*, the eye of a ſtay placed over a maſt-head.

COLLIER *d'étai*, the collar or lower part of a ſtay.

COLLIER *du ton*, or *du choquet*, the iron clamp of a French cap. As the caps of Engliſh veſſels are formed wholly of wood, this clamp is not in uſe amongſt our ſhipping.

COLLIERS *de défenſe*, the puddening of a boat's ſtem.

COLOMBIERS, two ſhores employed to launch a ſhip into the water.

COLONNE, a rank of ſhips; one of the ranks of a fleet or ſquadron of ſhips when ranged in the uſual order of ſailing.

COLTIS, the beak-head bulk-head, which is comprehended between the two cat-heads athwart, and deſcends from the top of the fore-caſtle to the platform of the head. See BEAK-HEAD.

COMBAT *naval*, a general or particular ſea-fight.

COMBUGER *les fûtailles*, to fill the water-caſks of a ſhip with freſh water.

COMITE, an under officer of a galley, who commands the ſlaves.

COMMANDANT, a commodore. See CHEF *d'eſcadre*.

COMMANDE, holloa! the anſwer given by the ſailors to the maſter, boatſwain, or other officer, when he calls to them by the name of the place where they are employed or ſtationed at that inſtant, as, "Fore-caſtle, there! main-top, there! "main-top, hoay!" &c.

COMMANDEMENT, the order or command to do any thing relative to the working of a ſhip.

COM-

COMMANDER *à la route*, to order or direct the courſe of a ſhip.

COMMANDES, knittles or ſeizings.

COMMANDEUR, the maſter or commander of any trading merchant-ſhip.

COMMIS, the ſupercargo of a merchant-veſſel.

COMMIS *des bureaux des douanes*, the ſurveyors of the cuſtoms who viſit ſhipping.

COMMIS *du munitionnaire*, or COMMIS *à la diſtribution les vivres*, a clerk or ſteward to the commiſſary or purſer of a ſhip of war.

COMMIS *général des convois & congés*, an overſeer or inſpector of the cuſtoms with regard to ſhipping.

COMMISSAIRE *de la marine* imports in general a civil officer, or commiſſioner of the marine, of which there are ſeveral: as,

COMMISSAIRE *général à la ſuite des armées navales*, an officer who receives the orders and inſtructions of the *intendant* of a fleet of men of war, and performs his duty when he is abſent. See INTENDANT *des armées navales*.

COMMISSAIRE *général de la marine*, the principal officer under the *intendant de marine*, in his department. It is his duty, 1. To excute the orders of the admiral, or commiſſioners of the admiralty, with regard to the number of ſhips which are ordered to be taken into the ſervice of the ſtate; to take care that they are properly equipped, manned, and victualled, for the expedition on which they are deſtined; to impreſs the maſters and mates who refuſe to ſerve; and to break or diſband and return, thoſe who will not do their duty. 2. To meaſure the ſhips which are appointed to attend any fleet; to give them orders, either to ſail with the ſaid fleet, or to join it according to the regulations which have been made; to keep account of thoſe who have been diſcharged from duty, and ſend them back in due time to the appointed place. 3. To attend the affairs of the dock-yards and harbours, and controul the clerks, artificers, and ordinary-men; to adminiſter the oath of allegiance to them; to review the ſhipping, and take an inventory of the prizes. 4. To take care that the oldeſt and beſt-ſeaſoned timber is firſt uſed; and that the bolts, nails, and other iron-works, have their due proportions, and conform to their dimenſions. 5. To examine, once every fortnight, the muſter-roll of the artificers, ſigned by the clerks. 6. To obſerve that the maſter-ſhipwrights do in no ways depart from the draught which has been eſtabliſhed by the council of conſtruction, of which he is always poſſeſſed of a copy. 7. To inſpect whatever concerns the port, and to take care that the ordinances relative thereto are faithfully executed; and to ſee that the ſhips are properly ſituated, and each one moored in the birth previouſly aſſigned.

It is alſo the office of the *commiſſaire général* to keep a liſt of the ſea-officers and ſailors, able and ordinary; and to minute the ſhips in which they have ſerved, and upon what footing they have been paid. With reſpect to the youths, officers ſervants, and other boys, their names, privileges, and time of ſervice, are enrolled in a particular liſt; and each of them is furniſhed with a certificate repreſenting theſe articles.

The *commiſſaire générale* is not, however, always charged with thoſe ſeveral employments himſelf. There are other commiſſaries, according to the circumſtances of time or place, who ſhare ſuch ſervices with him. Such are the COMMISSAIRE *ordinaire de la marine*; COMMISSAIRE *ayant inſpection ſur les vivres d'un port*, an agent victualler; COMMISSAIRE *prépoſé pour l'enrôllement des matelots*, an officer anſwering to our clerk of the cheque: COMMISSAIRE *pour les conſtructions des vaiſſeaux*; and COMMISSAIRE *des ports*, maſter-attendant.

COMMISSAIRE *général de la marine ambulant*, an officer whoſe duty reſembles that of the former, but who has no particular reſidence, being intended to viſit any one port or harbour occaſionally.

COMMISSAIRE *de l'artillerie de la marine*, an officer who, under the orders of the intendant, has the charge of the foundery, the proof of cannon and mortars, and of all other arms, gun-powder, ammunition, inſtruments, and implements of war. He has alſo the command of the gunners, matroſſes, and bombardiers, maintained in a royal port, who are divided into ſquads, commanded by *lieutenants de marine*, or lieutenants of bomb-ketches. There are two of theſe COMMISSAIRES *généreaux*, one for the weſtern

ports of France, and the other for Provence, or the eaſtern ports.

COMMISSAIRE *ordinaire de la marine*, an officer whoſe duty it is to ſuperintend the ordinary, the ſeveral clerks in a dock-yard, the ſtore-keepers accounts in a port, and the outfits and return of ſtores of a fleet.

COMMISSAIRE *ordinaire de l'artillerie de la marine*, an officer who performs the duty of the COMMISSAIRE *général de l'artillerie de la marine*, when he is abſent. He keeps the keys of the naval magazine and artillery ſtore-rooms jointly with the *garde-magazin*. He has alſo a key of the arſenal, wherein the fire-arms are diſpoſed according to their length and calibre; and he keeps a regiſter of all the artillery within the warren where he reſides. This regiſter contains principally the matter and fabric of ſuch artillery.

COMMISSION, an order given by the king to an admiral, vice-admiral, or other ſuperior officer, to cruiſe againſt, and ſeize, the enemy's ſhips, &c.

COMPAGNE, the cabin of the ſteward of a row-galley.

COMPAGNIE *de navires*, or CONSERVE, a convoy or fleet of veſſels.

COMPAGNONS, a general name for ſailors, mariners, or whoever forms a part of a ſhip's crew.

COMPAS *azimutal*, an azimuth-compaſs.

COMPAS *de carte*, or COMPAS *marin*, a pair of compaſſes, uſed to prick a chart, or diſcover courſes and diſtances thereon.

COMPAS *de route*, or *de mer*, a common ſea-compaſs.

COMPAS *de variation*, an amplitude-compaſs.

COMPAS *mort*, a compaſs whoſe needle has loſt its magnetical virtue.

COMPAS *renverſé*, a hanging compaſs whoſe face is turned downwards; it is uſually hung over-head in the great cabin, to ſhew the ſhip's courſe to the captain.

COMPASSER. See POINTER *la carte*.

COMPOST, a tide-duty, or revenue, ariſing from ſhipping.

CONFLUENT, the place where two rivers are united.

CONGE', a paſs, or permiſſion, granted to the maſter of a merchant-ſhip, by the office of admiralty, when he is ready to ſail.

CONNOISSANCE, the ſkill and intelligence of a pilot; alſo a proſpect of the land and ſea-coaſts.

CONNOISSEMENT, a ſhip's bill of lading, or the manifeſt of her cargo.

CONSEIL *de conſtruction*, a council held in any of the king's ports, conſiſting of the *intendant* (or commiſſioner), *le commiſſaire général*, and the principal officers, for the conſtruction or repairing of ſhips of war. Theſe laſt are uſually ſtyled the builders, and ſometimes *les charpentiers-conſtructeurs*, the ſhipwrights.

CONSEIL *de guerre*, a council of war.

CONSEIL *de l'amirauté*, a juriſdiction exerciſed under the name and authority of the lord-admiral, who has certain claims called the dues of the admiralty. The officers of the admiralty have their patents from the king, but they are nominated by the lord-admiral. The admiralty of France conſiſts of a lieutenant-general, who is preſident, a *lieutenant particulier*, three counſellors, an advocate, and a royal proctor; of a regiſter in chief, and two ſerjeants or bailiffs.

CONSEIL *de marine*, a ſecret council held by the king and his miniſters, to which he uſually ſummons the princes and the chief officers of his fleet, to deliberate with them about the affairs of naval war.

CONSERVE, a fleet or convoy of ſhips, aſſociated for their mutual defence and ſafety. See COMPAGNIE.

CONSOLE, a bracket, or part where two pieces of timber are united by a bracket.

CONSOMMATION, the conſumption of a ſhip during a ſea-voyage, comprehending whatever has been expended, as cordage, canvas, ammunition, &c.

CONSTRUCTION *des vaiſſeaux*, the art of ſhip-building, or the practical part of naval architecture.

CONSUL, a conſul eſtabliſhed in foreign parts, for the protection of the commerce of his country.

CONTINENT, a continent, a vaſt tract of land.

CONTRAT *à la groſſe*. See BOMERIE.

CONTRE-AMIRAL, the rear admiral of France.

CONTRE-BANDE, prohibited goods.

CONTRE-BITTES, the ſtandards which ſupport the cable bits.

CONTRE-BRASSER, to brace about the yards.

CONTRE-CAPION *de pouppe*, the upper part of the falſe-poſt of a row-galley, which is a crooked piece of timber placed on the fore-ſide of the ſtern-poſt to ſupport it. See CONTRE-RODE *de pouppe*.

CONTRE-CAPION *de proue*, the upper part of the ſtemſon of a galley. See CONTRE-RODE *de proue*.

CONTRE-CARENE, the kelſon of a galley. See CARLINGUE.

CONTRE-E'TAMBOT, the knee of the ſtern-poſt, by which it is attached to the keel.

CONTRE-E'TAMBOT, or FAUX-E'TAMBOT, is alſo the falſe ſtern-poſt.

CONTRE-E'TRAVE, the apron; a piece of timber which ſupports the ſcraf of the ſtem.

CONTRE-MAÎTRE, the boatſwain of a ſhip.

CONTRE-MARCHE, the general tacking of a diviſion of ſhips, arranged on the ſame line, ſo as to preſerve its former diſpoſition on the oppoſite tack.

CONTRE-MARE'E, a ſpring-tide.

CONTRE-QUILLE, the dead-wood placed on the keel afore and abaft. See FAUSSE-QUILLE.

CONTRE-RODE *de pouppe*, the lower part of the falſe-poſt, or counter-ſtern-poſt of a row-galley. See CONTRE-CAPION *de pouppe*.

CONTRE-RODE *de proue*, the lower part of the ſtemſon of a galley. See CONTRE-CAPION *de proue*.

CONTRE-SABORDS. See MANTELETS.

CONTRE-SALUT, the return of a ſalute at ſea.

CONTROLEUR *de la marine*, an officer of the marine, who attends and controls all the purchaſes and ſales held in a royal dock-yard; aſſiſts at the general muſters, reviews the artificers, and keeps a regiſter of their names.

CONVERSO, the waiſt, or main-deck, of a ſhip.

CONVOI, the convoy or eſcort of ſhips of war, uſed to guard a fleet of merchant-men.

CONVOYER, to convoy or accompany a fleet of merchant-men as their eſcort.

COQ, the cook of a ſhip.

COQUE, a kink, or round twiſt, in a new rope.

COQUERON, the cook-room, fore-caſtle, or cuddy, of a lighter or hoy.

COQUET, a cock-boat; a ſort of ſmall boat which paſſes between Normandy and Paris.

COQUETER, to navigate or manage a boat by padling, or rowing in the boat's ſtern with a paddle.

CORADOUX. See COURADOUX.

CORALINE, a light ſmall long-boat, or lanch, employed in the Levant, to fiſh coral.

CORBEAU, a ſort of ſheer-hook, or fire-grapling.

CORBEILLON, or CORBILLON, a ſmall kid, or tub, to contain the biſcuit or ſea-bread daily diſtributed to the ſeveral meſſes.

CORDAGE, cordage, a general name for all the ropes employed to rig or work a ſhip: the cables, or ground-tackling, are ſometimes comprehended in this term. See CABLE, and MANOEUVRES.

CORDAGE *blanc*, white, or untarred cordage.

CORDAGE *étuvé*, cordage which has paſſed through a ſtove, to diſcharge its moiſture or watery humour.

CORDAGE *goudronné*, tarred cordage.

CORDAGE *raque*, or *raqué*, cordage which has been well rubbed, in order to take off the huſks, ſtraw, or roughneſs of the hemp from the ſurface.

CORDAGE *refait*, twice-laid cordage.

CORDAGES *de rechange*, ſpare-ropes, ſpare-cordage.

CORDE, a rope of any kind.

CORDE *de retenue*, a guy, uſed to ſteady a heavy bale, caſk, &c. when hoiſted into a ſhip.

CORDE *de retenüe* is alſo the pendent of a relieving tackle, employed to prevent a ſhip from over-ſetting, or falling down more than is neceſſary in the careen; as alſo to right her, when the carcen is finiſhed. See ATTRAPE.

CORDE *de retinüe* likewiſe implies a head-faſt, or large rope uſed to eaſe a ſhip gradually off the ſtocks, or to prevent her from launching too haſtily.

CORDES *de défenſe*, fenders of junk or old cable.

CORDELLE, a warp or tow-line.

CORDERIE, a ropery or rope-walk; the rope-yard of a dock.

CORDIER, a rope-maker, or roper.

CORDON, a ſtrand of rope-yarns. See TORON.

CORNE *de vergue*, the crutch or cheeks fixed on the inner end of a gaff, or boom which embraces, and ſlides along the maſt of a ſmall veſſel, as the ſail is hoiſted or lowered.

CORNET *de mât*, a ſtep and partners peculiar to the maſts of ſome ſmall veſſels, being open at the after-part, ſo that the maſt may occaſionally be lowered over the ſtern. See CARLINGUE.

CORNETTE, a broad pendent, diſplayed at the maſt-head of a commodore.

CORPS *de bataille*, the center diviſion of a fleet of ſhips of war.

CORPS *de garde d'un vaiſſeau*, the half-deck; that part of a ſhip which is under the quarter-deck and before the bulk-head of the after-ſteerage.

CORPS *de pompe*, the chamber of a pump.

CORPS *d'un vaiſſeau*, the hull of a ſhip, without her rigging.

CORRECTIONS, the methods of correcting the errors of a dead reckoning, by obſervations and allowances, as preſcribed by the rules of navigation.

CORSAIRE, a privateer; alſo a pirate.

CORVETTE, a ſloop of war.

COSSE, a thimble; alſo a bull's eye, or traveller. See MARGOUILLET.

COTE, the ſea coaſt, the ſhore.

CÔTE *en écore*, a bluff or bold ſhore.

CÔTE *qui court nord-ſud*, or *eſt-oueſt*, a coaſt which lies north and ſouth, or eaſt and weſt.

CÔTE *ſaine*, a ſafe coaſt, where there is neither rocks or ſand-banks, that may render the acceſs dangerous to ſhipping.

Donner à la CÔTE, *ranger la* CÔTE. See DONNER and RANGER.

CÔTE *du vaiſſeau*, the ſide of a ſhip.

Preſenter le CÔTE', *mettre le* CÔTE' *du vaiſſeau en travers*, to bring the broad-ſide to bear upon an enemy. See EFFACER.

Mettre un vaiſſeau ſur le CÔTE', to lay a ſhip on the careen. See ABATTRE.

Faux-CÔTE, lap-ſided.

CÔTE' *du vent*, the weather-ſide; to windward.

CÔTE *ſous le vent*, to leeward; the lee-ſide.

COTES, or MEMBRES, *d'un vaiſſeau*, the timbers, or ribs of a ſhip, from the keel, upwards.

COTIER, a coaſter, or coaſting veſſel.

COTONNINE, a ſpecies of thick ſail-cloth, uſed in gallies, and veſſels of the Levant: it is formed by a mixture of hemp and cotton, the woof being of the former, and the warp of the latter.

COTONS, fiſhes of the maſt. See JUMELLE.

COTTIMO, a duty or exaction of ſo much per cent, which the conſuls, by order of their courts, or by the conſent of merchants, demand of the ſhipping of their nation, when they enter a port where ſuch conſuls are eſtabliſhed.

COUBAIS, a barge or galley of Japan, greatly ornamented, and rowed with forty oars.

COUCHE, the pillow of a ſtay, or the piece of wood upon which it reſts.

COUDRAN, a mixture of tar and ſome other ingredients, uſed to prevent ropes from rotting. See GOUDRON.

COUETS, the tacks of the main-ſail and fore-ſail. See AMURES.

COUETS *à queuë de rat*, tacks which taper to the point.

COUILLARD, an old term ſignifying the clue of a ſail.

COULADOUX, ſhroud-tackles, which are uſed in the gallies, and ſome other veſſels in the Mediterranean, in the place of dead-eyes and laniards.

COULANTES, or COURANTES, the running-rigging. See MANOEUVRES *courantes*.

COULE'E, that part of a ſhip's bottom which lies between the floor-heads and the keel, which is ſomewhat concave on the outſide, and called a hollow floor.

COULER *à fond*, to ſink at ſea. See alſo SANCER.

COULER *bas d'eau*, to ſink deeper in the water; expreſſed of a ſhip when her leaks gain upon the pump, or when ſhe receives more water than the pumps can diſcharge.

COULOIRS, certain gangways fixed on the ſides of undecked veſſels; alſo the grating-gangways on the ſides of ſuch veſſels as have their decks arched very high in the middle, as xebecks, &c.

COULOIRS likewiſe imports the paſſages that lead to the ſeveral cabins or ſtore-rooms of a ſhip.

COUP *d'aſſurance*, a gun fired by a ſhip on her entrance into a port, when ſhe diſplays her colours, as a ſign of peace. See ASSURANCE.

Coup *de gouvernail*, the whole force of the helm.

Coup *de mer*, the ſhock of a wave of the ſea, ſtriking a ſhip violently, and ruſhing over her deck.

Coup *de partance*, a farewell gun; a gun fired as a ſignal for ſailing.

Coup *de vent*, a ſudden ſquall or guſt of wind.

COUPS *de canon à l'eau*, ſhot received under water, or between wind and water.

Coups *de canon en bois*, ſhot received in the upper works of a ſhip.

COUPER *la lame*, to cut the ſea; to divide the waves.

Couper *le cable*, *ou les mâts*, to cut the cable, or cut away the maſts.

Couper *l'ennemi*, to thwart or croſs the enemy's courſe, in giving chace to him.

COUPLE *de haubans*, a pair of ſhrouds.

Couple *du loſ*, or *du balancement*, the looſ-frame or looſ-timbers.

COUPLES *d'un vaiſſeau*, the frame-timbers of a ſhip. See Gabari.

COURADOUX, between-decks; the ſpace betwixt any two decks of a ſhip; alſo the place where the ſoldiers ſleep in a galley. See Entre-pont.

COURANT, a current or ſtream at ſea.

COURBATONS, ſmall knees, fixed in the upper part of a ſhip, for the ſame purpoſes as the *courbes* are, in the lower parts.

Courbatons *de l'éperon*. See Herpes *de peulaine* and Montans.

COURBE *capucine*, the ſtandard which faſtens the cut-water to the ſtem.

COURBES, a general name for the larger knees of a ſhip.

Courbes *d'arcaſſe*, the tranſom-knees, or ſleepers.

Courbes *de bittes*, the ſtandards of the cable-bits. See Contre-bittes.

Courbes *d'écubier*, the cheeks of the head. See Jottereaux.

Courbes *d'equerre*, or *à fauſſe équerre*, knees which are right-angular; and knees which are within, or without a ſquare.

COURCIVE, or Courcite, a half-deck, formed in a veſſel which is not wholly decked.

COUREAU, a ſmall yawl of the Garonne.

COURE'E or Couroi, a compoſition, or ſtuff, uſed to pay a ſhip's bottom at the time of docking or breaming.

COURIR, imports, in general, to ſail, to advance at ſea, to ſtand onward; as,

Courir *à l'autre bord*, to ſtand upon the other tack.

Courir *au large*, to ſtand off. See Tirer *à la mer*.

Courir *au plus près*, to run cloſe upon a wind.

Courir *en latitude*, to run down latitude.

Courir *en longitude*, to run down longitude.

Courir *la bouline*, to run the gauntlope.

Courir *la mer*, to infeſt or ſcour the ſea; to cruiſe up and down therein.

Courir *le bon bord*, to make a lucky cruiſe; a cant phraſe peculiar to cruiſers or pirates, and alluding to the capture or plunder of merchant-ſhips.

Courir *même bord*, to ſtand upon the ſame tack as ſome other ſhip in ſight.

Courir *nord*, *ſud*, *&c.* to ſtand to the northward, ſouthward, &c.

Courir *ſur la terre*, to ſtand in ſhore, or on ſhore.

Courir *ſur un vaiſſeau*, to chace or purſue a ſhip.

Courir *ſur ſon ancre*, to run over, or foul of the anchor.

Courir *terre à terre*. See Ranger *la côte*.

Courir *une bordée*, or *bord ſur bord*. See Louvier.

COURONNEMENT, the after-part of a ſhip's taffarel, which is uſually ornamented with ſculpture.

COURROI. See Coure'e.

COURS, or Course, a cruiſe at ſea. Hence *faire* Cours, to go upon a cruiſe.

Cours *du vaiſſeau*, the courſe or run of a ſhip; alſo the wake, or track marked on the ſurface of the water behind her. See Ouaiche.

COURSIER, a bow-chace, or great braſs cannon in the head of a row-galley.

Coursier, or Coursie, a fore-and-aft paſſage between the banks of a row-galley, where the *comite*, or boatſwain, walks, to ſee that the ſlaves manage their oars, and row with application.

COURSIERE, a ſpar-deck, or grating-deck, reaching from the quarter-deck to the fore-caſtle.

COURTAGE, a tax or duty levied on all merchandiſes which paſs by ſea from one port to another.

COURVETTE. See Corvette.

COUSSIN *de beaupré*, the pillow of the bowſprit.

Coussin *de bittes*, the fir-lining or doubling of the bits. See Chevet.

Coussin *de canon*, the bed of a cannon which ſupports the breech.

COUSSINS, the mats of the top-rims, uſed to prevent the top-ſails from being fretted by ſtriking the edges of the tops.

Coussins *d'amures*, the mats nailed over the cheſs-tree, to prevent the clue of the main-ſail from being galled when the tack is aboard.

COUSTIERES, the ſhrouds of a galley, which are uſually formed of runners and tackles. See Couladoux.

COUT *d'aſſurance*. See Prime *aſſurance*.

COUTELAS. See Bonnettes *en étui*.

COUTURE, a ſeam between the planks of the deck or ſide of a ſhip.

Couture, *de cueille de voile*, the ſeam of a ſail.

Couture *ouverte*, an open ſeam, or one from which the oakum has been expelled by the ſtraining of the ſhip, &c.

COUVERTE, the deck of a ſhip, in the dialect of Provence.

Couverte *de l'iſoſcele de proue*, the fore-caſtle, or fore-deck, of a galley, together with the ſpace beneath it, where the cannon are planted.

COUVERTURES *de fanaux*, a ſort of tubs to cover the top and poop-lanthorns, in order to preſerve them when they are not in uſe.

CRAIE, a ſmall Swediſh ſhip, without top-maſts or top-ſails.

CRAMP, a cramp-iron; alſo the hook of a block.

CRAQUER, to crack or ſtrain; expreſſed of a ſhip that labours greatly in a turbulent ſea.

CRAVAN, a barnacle, or ſmall ſhell-fiſh, of a diſagreeable taſte, which faſtens to a ſhip's bottom in a long voyage.

CREUX, the depth of the hold from the lower-deck beams to the floor.

Creux *d'une voile*, the belly or cavity of a ſail, which retains the wind.

CRIBLE', pierced with holes; expreſſed of a ſhip that has been much damaged by worms or cannon-ſhot.

Une voile CRIBLE'E, a ſail much damaged by ſhot.

CRIQUE, a creek, or ſmall natural harbour.

CROC, a boat-hook, or ſetting-pole.

Croc *de candelette*, the hook of the fore-tackle. See Capon.

Croc *de pompe*, the pump-hook.

CROCS *de palans*, the tackle-hooks.

CROCHETS *d'armes*, certain crutches, or hooks, to ſupport the ſmall-arms in the cabins of a ſhip of war.

Crochets *de retraite*, the eye-bolts, in the train of a gun-carriage, wherein are hooked the relieving tackles.

CROISE'E *de l'ancre*, the croſs of the anchor; or that part where the ſhank terminates at the arms.

CROISER, to cruiſe in any particular ſtation.

CROISER *à la lame*. See De bout *à la lame*.

CROISETTE, the pin or bolt uſed as a fid to any flag-ſtaff.

CROISEUR, a cruiſer; a veſſel employed to guard a coaſt; alſo a pirate, or ſea-rover.

CROISEURS, or *vaiſſeaux en croiſiere*, ſhips cruiſing in an appointed ſtation or latitude.

CROISIERE, a rendezvous or latitude for cruiſers.

CROITRE, to riſe or flow; expreſſed of the tide.

CROIX *ſur les cables*, a croſs in the hawſe.

CRONE, a wheel-crane, built on a wharf.

CROQUER, to hook or grapple any thing.

Croquer *le croc de palan*, to hook the cat to the anchor.

CROUCHANTS, the crochets, or floor-timbers fore and aft in a boat.

CROULER. See Ruoler.

Crouler *un bâtiment*, to ſhake a ſhip by jumping on her decks, in order to launch her from the ſtocks.

CROUPIARDER. See Mouiller *en croupiere*.

CROUPIAT. See Embossure.

CROUPIERE, or Croupias, a ſtern-faſt; a ſtern cable or hawſer.

CUEILLE, one of the cloths of a ſail.

CUEILLETTE, a meaſure or weight of any merchandiſe, which is equal to a quintal, or 100 lb.

CUILLER *à brai*, a pitch-ladle, to pay the ſeams of a deck.

Cuiller *à canon*, or Chargeoir, a gunner's ladle. See alſo Lanterne.

Cuiller *de pompe*, a pump-borer.

CUIRS *verds*, raw hides uſed to cover the tops, or the yards, or ſerve the cables, &c. to prevent them from being fretted.

CUISINE, the galley or cook-room of a ſhip.

CUL *de lampe*, the lower finiſhing, an ornament of ſculpture reſembling the bottom of a lamp, and placed in ſeveral parts of the ſtern or galleries, to terminate the carved-work.

CUL *de pit*, *de porc*, or *de port*, a double or ſingle wall-knot, wrought on the end of a tack, ſtopper, or other rope.

CUL *de ſac*, a name given by the inhabitants of America to a harbour formed by nature without the aſſiſtance of art.

CUL *de vaiſſeau*. See ARRIERE.

CULASSE, the breech of a cannon; alſo the ſtock of a muſquet.

CULE E, the ſhock which a ſhip feels when ſtriking the ground, on a rock or ſand-bank.

CULER, to go aſtern; to have ſtern-way.

CURATEUR *de la marine*, an officer who formerly aſſigned to the ſeveral TRIE'RARQUES the duties of their reſpective departments. See TRIE'RARQUE.

CURETTE, a pump-ſcraper, faſtened to a ſtaff, or pole, of ten or twelve feet long, to clean the inſide of a pump.

CUSEFORNE, a ſmall, long, and ſharp rowing-boat of Japan, without decks, and employed to fiſh whales.

D.

DAGUE *de prevôt*, the colt or cat uſed by the *prevôt* to puniſh criminals.

DAILLOTS, or ANDAILLOTS, the hanks or grommets of a ſtay.

DALE, the trough or channel in which the train is laid in a fire-ſhip.

DALE *de pompe*, the pump-dale.

DALATS, the ſcupper-holes of a ſhip. See GOUTTIERE.

DAME-JEANNE, a demijan, or large bottle, containing about four or five gallons, covered with baſket-work, and much uſed in merchant-ſhips.

DAMELOPRE, a veſſel navigated in the canals of Holland.

DANGERS *civils*, the duty, fine, or exaction, formerly demanded by the lord of the manor for any merchant, or maſter, who had ſuffered ſhipwreck on his coaſt. See BRIS.

DANGERS *naturels*, a general name for the dangers of a coaſt or bank, as rocks, or ſhelves of mud, ſand, &c. which the officers of the adjacent ports are charged to diſtinguiſh by buoys or beacons.

DARD *à feu*, a fire-arrow, uſed to burn the ſails of an enemy's ſhip.

DE'BACLE, or DE'BACLAGE, the act of clearing or opening an harbour, by removing the lightened veſſels to make room for ſuch as are laden.

DE'BACLEUR, an officer whoſe duty it is to regulate the mooring of light and laden ſhips in a harbour, and to keep the paſſage, or fair-way, open and clear.

DE'BARCADOUR, a wharf, or ſtore-houſe, to receive goods diſcharged from a ſhip.

DE'BARDAGE, the act of unlading in general; it is more particularly applied to the diſcharge of fire-wood.

DE'BARDER, to unlade wood, &c. Whence,

DE'BARDEUR, a lighter-man. See GABARIER and PORTE-FAIX.

DE'BARQUEMENT, a return of the artillery, ſtores, rigging, &c. of a ſhip of war into the dock-yard; alſo the diſcharging of the officers and crew.

DE'BARQUEMENT likewiſe implies diſembarking, or landing and diſcharging the cargo of a merchant-ſhip.

DE'BARQUER, to unload or diſcharge a ſhip; to diſembark; to return to the ſhore.

DE'BAUCHE, an irregular tide.

DE'BILLER, to take off or diſmiſs the horſes that track veſſels up and down a canal.

DE'BITTER *le cable*, to unbit the cable.

DE'BORD *à bord*, upright on the water.

DE'BORDE, put off, ſheer off! the order given by ſome officer of a ſhip, to a boat lying near her, to remove further off.

DE'BORDER, to ſheer off from ſome other ſhip, particularly from an enemy who

who attempts to board : alſo to over-haul the tacks and ſheets, in order to haul a ſail up in the brails.

DE'BOSSER *le cable*, to take the ſtoppers off from the cable.

DE'BOUCLE', a term oppoſed to BOUCLE', which ſee.

DE BOUQUEMENT, the arrival into open ſea, after having been amongſt iſlands, or in narrow channels.

DE BOUT, an-end, or perpendicular.

De bout *à la lame*, head to the ſea.

De bout *à terre*, head to the ſhore ; ſtanding in-ſhore. See Donner *de bout à terre*.

De bout *au corps*. See Abordage.

De bout *au vent*. See Aller *de bout au vent*.

DE'BOUTONNER *la bonnette*. See De'lacer.

DE'BRIS, the effects which remain in a ſhipwrecked veſſel. By the ordonnances of the marine in France, all perſons who ſhall have found, or drawn ſuch effects from the bottom of the ſea, are to place them in ſafety, and in twenty-four hours afterwards, at furtheſt, to make proclamation thereof, under pain of being puniſhed as felons : and by the ſame ordonnance, it is permitted to the proprietors of the ſaid effects to demand them in a year and a day after ſuch publication, upon paying the ſalvage-money. It is to be wiſhed that this laudable decree was eſtabliſhed in England.

DE'CHARGE, the act of unlading or diſcharging a merchant-ſhip.

De'charge *le petit hunier*, the order to fill the fore-top-ſail !

DE CHARGEMENT. See De'charge.

Se DE'CHARGER, to looſe water ; expreſſed of the ſhip's pump.

Decharger *les voiles*, to fill the ſails, after they had lain aback

DE'CHEOIR. See Abattre.

DE CHET. See De rive.

DE CHIRAGE, the act of breaking up an old ſhip, or of ripping off her planks.

DE CHIRER, to rip up an old veſſel.

DECHOUER, to get a ſhip afloat, or off from the ground, into deep water.

D'E'CLINAISON, the variation of the compaſs, or of the magnetical needle.

Dec linaison *d'un aſtre*, the declination of a fixed ſtar, &c.

DE COLEMENT, the forming of a tenon upon the end of a piece of timber.

DECOMBRES, the chips and uſeleſs pieces of timber which are left on a ſhipwright's wharf, after a veſſel is built and launched.

DE'COUDRE, to rip off planks from any part of a ſhip's ſide, in order to examine her timbers, &c.

DE'COUVERTE, a look-out at the maſt-head.

DE COUVRIR *les terres*, to make, or diſcover, the land.

DEDANS, when expreſſed of the ſails, imports furled or ſtowed : as,

Mettre les voiles Dedans, to take in the ſails.

DE'FEND, keep off, keep at a diſtance ; the order given by the pilot, or officer of the watch, to the helmſman, to ſteer off further from ſome adjacent object, which may damage the ſhip.

DE'FENDER *la côte*, to defend the ſea-coaſt, and prevent an enemy from landing thereon.

DE'FENSES, the ſkeeds of a ſhip's ſide ; alſo booms to fend-off another ſhip which is near.

Defenses *de bouts de cable*. See Cordes *de défenſe*.

Defenses *pour chaloupes*, looſe ſkeeds hung over a ſhip's ſides occaſionally, to preſerve the boats from being damaged when they are hoiſted into, or out of, the veſſel.

DE'FERLER, to looſe or heave out the ſails. See De'ployer.

DE'FIE *du vent*, you are all in the wind ; keep her full ! an information or caution to the helmſman, that the ſhip is too near the wind ; implying that he ſhould keep her further off, or more to leeward, ſo as to fill the ſails.

De fie *l'ancre du bord*, bear off the anchor ! the order to keep the fluke or bill of the anchor off from the ſide, to prevent it from tearing the planks at the time of hoiſting the fluke up, in order to be ſecured by the ſhank-painter.

DE'FIER, to bear off, as a ſhip from a wharf, or one veſſel from another, to prevent either from being bruiſed or damaged by rubbing, or ſtriking againſt each other.

DE FUNER, to unrig a ſhip, to ſtrip a maſt, &c.

DE GAGER *un vaiſſeau*, to reſcue a ſhip from

from the poſſeſſion, attack, or purſuit, of an enemy.

DE GARNIR *le cabeſtan*, to unrig the capſtern, by taking off the voyol, and unſhipping the bars.

DE'GARNIR *un vaiſſeau*, to unrig or diſmantle a ſhip. See DEGRE'ER.

DE GAUCHER, to bevel or form a piece of timber, ſo as to fit exactly to the place for which it is deſigned.

DE'GORGEOIR, the bit or priming-iron of a cannon.

DE'GRADER *un vaiſſeau*, to lay-by a ſhip; alſo to quit or abandon a ſhip at ſea, after having taken out the rigging, ſtores, &c. when ſhe is become ſo old and crazy as to be uſeleſs or dangerous.

DE'GRAPPINER, to warp a ſhip off from the ice by the means of grapplings, when ſhe had approached too near it.

DEGRE', the diviſion of a degree upon a quadrant, nocturnal, &c.

DEGRE' *de latitude*, a degree of latitude.

DEGRE' *de longitude*, a degree of longitude.

DE'GRE'ER, to unrig a ſhip; alſo to looſe the rigging in a ſtorm. See DESAGRE'ER.

DEHORS, the offing, the outſide, or road, of a harbour.

DE JOUER, to fly out, to flutter, or turn in the wind, expreſſed of flags, pendents, &c.

DE'LACER *la bonnette*, to unlace or take off the bonnet from the foot of a ſail.

DE'LAISSEMENT, an inſtrument, or act, by which the loſs of a ſhip is announced by the maſter or merchant to an inſurer, ſummoning him to pay the ſtipulated inſurance.

DE LESTAGE, the diſcharging of ballaſt from a ſhip.

DE'LESTEUR, an officer appointed to receive the ballaſt of ſhips; alſo a ballaſt-lighter.

DELOT, or rather COSSE. See COSSE.

DE'MAILLER. See DE'LACER.

DEMANDE, the ſcantlings or proportions required in every piece of timber which enters into the conſtruction of a ſhip of war; alſo the dimenſions of every piece, without regard to ſuch demand.

DE'MARAGE, or DE'MARRAGE, the breaking adrift from the moorings; or parting the cables.

DE'MARRE, the order to caſt off, or let go a cable, hawſer, or other rope.

DE'MARRER, to unmoor; to weigh anchor; to put to ſea.

DE'MATE', diſmaſted by a ſtorm or battle; alſo without the maſts, when they have been hoiſted out.

DE'MATER, to take out the maſts of a ſhip.

DE MEURER, to remain, or be left, in ſome road, bay, or harbour.

DEMI-BARRES. See BARRES *de cabeſtan*.

DEMI-CLEFF, a half-hitch on a rope, &c.

DEMI-PIQUE, a half-pike, ſometimes uſed to oppoſe the boarders in a ſea-fight.

DEMI-PONT, the half-deck. See CORPS *de garde*.

DEMOISELLES. See LISSE *de porte-haubans*.

DE'MONTER *de gouvernail*, to unhang the rudder.

DE PARTEMENT, a marine arſenal, or dock-yard with it's gun-wharf; alſo the extent of the diſtrict and juriſdiction of an *Intendant de la marine*.

DE PASSER, to be ahead of one's reckoning; to ſail beyond the place intended, as by miſtake.

DE PASSER *la tournevire*, to ſhift the voyol, or change it to the other ſide of the ſtern.

DE'PASSER *un vaiſſeau*, to fore-reach, gain, ground upon, or paſs by another ſhip when ſailing in company with her.

DE'PECER *un batiment*. See DE'CHIRER.

DE'PENCE, the ſteward-room in a ſhip of war.

DE'PENCIER, or DE'PENSIER *d'un vaiſſeau*, the ſhip's ſteward. See MAITRE-VALET.

DE'PENDANT. *Aller en* DE'PENDANT, to ſail in company; to follow.

Tomber en DE'PENDANT, to bear up; or to ſhorten ſail in order to veer.

DE'PLOIER *le pavillon*, to let fly, or diſplay the enſign.

DE'PLOIER *une voile*, to heave out, or ſet a ſail.

DE'PREDE', goods plundered or robbed from a wreck, contrary to law.

DE'RADER, to drive with the anchors ahead; to be driven from the anchors and forced out to ſea, by the violence of a ſtorm.

DERALINGUER, to be blown from the bolt-rope, in a ſtorm; ſpoken of a ſail.

DERANGE'E. See ANCRE and TREVOR.

DERAPER, to looſen from the ground; underſtood of the anchor when it is almoſt aweigh.

DE'RIVATION, the yawing, or deviation from the line of the courſe.

DE'RIVE, the angle of lee-way, or drift.

DE'RIVE is alſo the ſtray-line, or allowance made for ſtray-line, occaſioned by a ſhip's falling to leeward, when ſounding, in deep water.

DE'RIVE is likewiſe uſed for a lee-board. See SEMELLE.

DE'RIVE *qui vaut la route*, a drift favourable to the courſe.

Belle DE'RIVE, a good offing, or ſea-room.

DE'RIVER, to drive, to be driven to leeward by a tempeſt or foul wind.

DE ROBER, to becalm.

DE'ROBER *le vent d'un vaiſſeau*, to becalm a ſhip; alſo to becalm ſome of the ſails with others.

DE'SAFOURCHER, to unmoor.

DE'SAGRE'ER, to have the rigging, or a part of it, blown away or loſt by a ſtorm, &c.

DE'SANCRER, to aweigh anchor, and depart from a port or road.

DE'SARBORER, to ſtrike the top-maſt and haul down the colours.

DE'SARMEMENT. See DE'CHARGEMENT and DE'BARQUEMENT.

DE'SARRIMER, to alter or ſhift the ſtowage of the hold, in order to change the ſhip's trim.

DESCENDRE, to maroon. See DESERTER.

DESCENDRE *une riviere*, to fall down a river with the tide.

DESCENTE, a deſcent or landing upon an enemy's country.

DE'SEMBARQUER. See DEBARQUEMENT.

Vaiſſeau DE'SEMPARE', a ſhip diſabled, as in a tempeſt or battle.

DE'SEMPARER *un vaiſſeau*, to diſable a ſhip in battle, by diſmaſting her and deſtroying her ſails, &c.

DESERTER *quelqu'un*, to maroon a ſailor, or leave him aſhore in a foreign country contrary to his inclination.

DESSUS *du vent*. See AVANTAGE *du vent*.

Vingt hommes là-DESSUS, clap on here twenty hands! the order from an officer for twenty men to be employed on ſome particular duty.

DESTINATION, the place whither a ſhip is bound.

DE'TACHER, to ſelect ſome ſhips from a fleet or ſquadron, for a particular ſervice.

Se DE'TACHER, to quit or abandon the fleet.

DE'TALINGUER, to unbend the cable, or take it off from the anchor.

DE'TREMPEUR *de viandes ſalées & de poiſſon*, the cook's ſhifter.

DE'TROIT, a ſtreight or narrow channel between two lands; alſo an iſthmus between two ſeas.

DE'VENTER *les voiles*, to ſhiver the ſails, or brace them ſo as to ſhiver in the wind.

DEVERGUER, to unbend the ſails from their yards.

DEVERS, the moulding of any piece of timber, amongſt ſhipwrights, by incurvation, circular, elliptical, or otherwiſe. Whence,

Marquer le bois ſuivant ſon DEVERS, to mould the timber according to it's compaſs or inclination.

DE'VIRER *le cable*, to ſurge the cable about the capſtern or windlaſs, in order to prevent it from riding, with one part over another.

DEVIS, a ſcheme containing the general dimenſions of a ſhip, from which the ſhipwright is to form a draught for conſtructing her.

DEXTRIBORD, or rather STRIBORD, the ſtarboard ſide of a ſhip. See STRIBORD.

DIABLOTIN, the mizen top-maſt ſtay-ſail.

DIGON, or DIGUON, the ſtock or ſtaff of a vane or pendent; alſo a piece of the ſhip's cut-water.

DIGUE, a wall, mound, or pier, of earth or ſtone, and ſometimes of timber, built on the margin of a river, to confine it within it's banks, ſo that it may not overflow the adjacent country.

DILIGENCE, a ſwift-ſailing wherry, or paſſage-boat.

DISPUTER *le vent*, to ſtrive for the weather-gage, or endeavour to get to windward of ſome ſhip, or fleet in ſight.

DISTANCE *de ports*, &c. the line of diſtance, in navigation, between any two given places, whoſe latitude and longitude are known.

DISTANCE *de fabords*, the diſtance, or interval, between two gun-ports in a ſhip's ſide.

DIVISION *d'une armée navale*, one diviſion of a fleet of ſhips of war.

DIXIEME, an additional caſk allowed by an agent-victualler to every ten caſks of ſea proviſions, to anſwer for waſte or leakage.

DOGRE, or DOGRE-*bet*, a Dutch dogger.

DOGUES *d'emure*, the holes in the chefs-trees. See TAQUET.

DONNER *à la côte, ſur un banc, ou ſur un recueil*, to run aground, ſtrike, or be ſtranded on any coaſt, ſhoal, or rock.

DONNER *de bout à terre*, to run right in for the land.

DONNER *dedans*, to enter a port, road, &c.

DONNER *le bas de ſoie*. See BAS *de ſoie*.

DONNER *les cuées*, to ſtrike repeatedly on a ſhelf or rock.

DONNER *le fond*. See MOUILLER.

DONNER *la cale*. See CALE.

DONNER *la chaſſe*. See CHASSER.

DONNER *le côte*. See PRENDRE *le côté*.

DONNER *la feu à un vaiſſeau*, to bream a ſhip.

DONNER *le fuif*, to pay a ſhip's bottom after ſhe is breamed.

DONNER *vent devant*, to throw a ſhip up in the wind, or in ſtays; to bring the wind a-head, by putting the helm a-lee.

DONNER *un grand hunier*, to ſpare a main top-ſail to ſome other ſhip in company; implying, that ſuch ſhip ſails ſlower by as much, as the force of a main top-ſail aſſiſts her velocity.

DONNEUR *a la groſſe*, the inſurer of a ſhip and her cargo.

DORER *un vaiſſeau*, to pay a ſhip's bottom. See ESPALMER.

DORMANT, the ſtanding part of a tackle, brace, or other running rope.

DORMANTE, *l'eau* DORMANTE, ſtanding water, or water where there is no tide or current.

Bateau fait à DOS *d'ane*, a ſharp-bottomed boat.

Le DOSSIER *d'un bateau*, back-board of a boat.

D'OU *eſt la navire?* whence came the ſhip? where belongs the ſhip to?

DOUBLAGE, the ſheathing applied to the bottom of a ſhip.

DOUBLE *d'une manœuvre*, the bight of a rope. See BALANT.

DOUBLER, to double, or double upon, in a ſea-fight.

DOUBLER *le ſillage*, to make a crooked wake; to run over more ſpace of water than is neceſſary, by bad ſteerage.

DOUBLER *un cap, parer un cap*, to double, or paſs beyond a cape, and leave it behind.

DOUBLER *un vaiſſeau*, to ſheathe a ſhip's bottom.

DOUCIN, a name given by ſeamen to brackiſh water.

DRAGAN, the ornamented part of the ſtern of a row-galley.

DRAGON, a whirlpool, or vortex of water.

DRAGON *de vent*, a ſudden guſt or violent ſquall of wind.

DRAGUE, a drag, or inſtrument to clean the bottoms of rivers and canals; alſo to catch oyſters.

DRAGUE *de canon*. See BRAGUE.

DRAGUER, to clean the bottom of a river or canal with a drag.

DRAGUER *l'ancre*, to drag, or ſweep the bottom, for an anchor which is loſt.

DREGE, a ſort of net for catching ſoles and turbot.

DRESSE *la chaloupe!* trim the boat! See BARQUE *droit*.

DRESSER *les vergues*, to brace the yards to the wind, when the ſails are furled at ſea.

DRESSER *un piece de bois*, to trim or prepare any piece of timber for it's uſe.

DRISSE, or ISSAS, the haliards of any ſail or yard.

Sen de DRISSE, knight-heads.

DRISSE *de pavillon*, the enſign-haliards.

Allonge la DRISSE, the order to man the haliards, of any ſail, or to ſtretch them along to be manned.

DROGUERIE, the herring-fiſhery, or the catching and preparation of herrings, on the Northern Banks.

DROIT *d'ancrage*. See ANCRAGE.

DROIT *de Congé*. See CONGE'.

DROIT *de varech, ou varet*. See CHOSSE *de la mer*, and DE'BRIS.

Aller en DROITURE, or *faire ſa rout en* DROITURE, to make a ſtrait courſe; to make a voyage without touching at any intermediate port.

DROSSE, or DROUSSE, the tiller-rope, formed of white hemp, and wound about the barrel of a ſhip's wheel.

DROSSE *de canon*, a gun-tackle.
DROSSE *de racage*, a parrel-rope, or truſs-rope.
DUNES, downs or heighths on the ſea-coaſt.
DUNETTE, the poop of a ſhip of war.
DUNETTE *ſur* DUNETTE, the poop-royal. See TEUGUE.

E.

EAU *changée*, foul water; or water whoſe colour is changed by approaching the ſhore, or otherwiſe.
EAU *du vaiſſeau*. See SILLAGE.
EAU *haute*, high-water. See HAUTE-MARE'E.
EAU *maigre*, or MAIGRE-EAU, ſhoal-water. This phraſe is peculiar to the common ſailors.
EAU *plate & courtoiſe*, very ſmooth water; the ſtate of the water in a dead calm.
EAU *premiere* & EAU *ſeconde*, the firſt and ſecond floods after a neap-tide.
EAUX *formées*, water incloſed with ice.
EAUX *ouvertes*, an open channel, after the ice has melted or ſeparated.
EBAROUI, abounding with ſhakes or rents; expreſſed of the planks of a ſhip when they are ſplit, and her ſeams opened by the ſun or wind, for want of being ſluiced over with water, in the evenings and mornings.
EBE, or JUSSANT, the ebb-tide.
Il y à EBE, the tide ebbs, or falls.
EBRANLEMENT, the cracking or ſtraining of a ſhip, as ſhe labours in a high ſea.
ECALE, the touching, or anchoring, at any port, in the courſe of a voyage.
ECARLINGUE. See CARLINGUE.
ECART *double*, a ſcarf of two ends of timber laid over each other.
EGART *ſimple ou quarré*, butt and butt; the joining of the butt-ends of two planks.
ECHAFAUD, a ſtake, or light ſtage, uſed in Newfoundland to dry cod-fiſh; alſo a ſtage hung over a ſhip's ſide, to caulk or repair any breach.
ECHANDOLE. See ESCANDOLE.
ECHANTILLONS, the ſcantlings or dimenſions of the different pieces of timber uſed in ſhip-building.
ECHARPE, the ſhell of a block or pulley. See ARCASSE and MOUFFLE.
ECHARS, a wind that veers and hauls; a light and variable wind; a cat's paw.
ECHELLE, a ſcale of equal parts; alſo a ſea-port town, in the dialect of Provence.
ECHELLE *de pouppe*, the ſtern or quarter-ladder, formed of ropes.
ECHELLES, the gangway and ladder, which ſerve to aſcend or deſcend the ſhip's ſide; likewiſe the ſeveral ladders between-decks.
ECHELLES *de latitude croiſſante*. See CARTE *réduite*.
ECHILON, a water-ſpout. See TROMPE *de mer*.
ECHOME, a thole-pin. See AUTARELLES.
ECHOUE', aſhore, run aground.
ECHOUEMENT, the ſtate of being ſtranded or wrecked on a coaſt.
ECHOUER *ſur la rivage*, to run aground; to be ſtranded.
ECLAIRCIE, a clear ſpot in a cloudy ſky. See CLAIRON.
ECLAT *de bois*, a ſplinter, or chip, torn from any piece of timber, by the force of a cannon-ball, or by the ſtroke of an ax.
ECLUSE, a ſluice, or dam.
ECOLE, the ſchool, or academy, in a dock-yard, where navigation, arithmetic, and fortification are taught.
ECOPE, a boat's ſcoop, or ſkeet.
ECORE, the edge or extremity of a ſand-bank. See COTE'.
ECORES. See ACCORES.
ECOUETS, the tacks of the main-ſail and fore-ſail.
ECOUPE, or ECOUPE'E, a ſwab. See FAUBER.
ECOUTES, the ſheets of a ſail.
ECOUTE *de bonette en etui*, the tack or guy of a ſtudding-ſail boom.
Avoir les ECOUTES *largues*, to ſail with a flowing ſheet.
Entre deux ECOUTES, both ſheets aft, or right before the wind.
*Larguer ou filer l'*ECOUTE, to caſe off the ſheet.

Border les ECOUTES, to haul aft the ſheets.

Border plat les ECOUTES, to haul the ſheets flat aft, or cloſe aft.

ECOUTILLE *qui s'emboîte*, a hatchway with a ſcuttle which covers its border.

ECOUTILLES, the hatchways and ſcuttles in a ſhip's deck.

ECOUTILLES *à huit pans*, ECOUTILLES *du mât*, the holes and partners of the maſt, which are uſually in the form of an octagon.

ECOUTILLON, a ſcuttle, or ſmall hatchway; alſo it's cover.

ECOUVILLON, the ſponge of a cannon.

ECOUVILLONNER, to ſponge a cannon; alſo to clean or cool it with a wet ſponge.

ECRITURES, the papers of a ſhip, comprehending journals, regiſters, paſſports, &c.

ECRIVAIN, the clerk of a ſhip of war; alſo the ſupercargo of a merchant-ſhip.

ECRIVAIN *de la corderie*. See COMMISSAIRE.

ECUBIERS, the hawſe-holes; alſo the hawſe-pieces, through which thoſe holes are cut.

ECUEIL, a dangerous rock or ſhoal.

ECUELLE *de cabeſtan*, the iron ſocket or ſaweer of the capſtern.

ECUME, the froth or foam of a breaking ſea.

ECUMER *la mer*, to ſcour or infeſt the ſea, as a pirate.

ECUSSON, Ecu *des armes*, a compartment or ſcutcheon upon the ſtern, forecaſtle, or belfrey, upon which the arms of the ſhip's owner, or of the province or city from which her name is derived, are painted or carved. Theſe are more peculiar to the French and Dutch than to Engliſh veſſels. See fig. 3. plate X. wherein the ecuſſion is repreſented.

EFFACER, to bring the broadſide to bear upon ſome adjacent object; as by clapping a ſpring upon the cable.

EFFLOTER, to part company, or ſeparate at ſea, as from a fleet or ſome other veſſel.

EGOUTTOIR, a grating, or drain wherein to lay cordage after it is tarred.

EGUILLES *de tré*. See AIGUILLES.

EGUILLETTES, or rather AIGUILLETTES, the ſuttock-riders.

EGUILLETTES, knittles, or ſmall robands; alſo the loops or buttons of a bonnet.

EGUILLETTES *de mâts*. See ENTENNES.

EGUILLETTES *de pontons*, the cleats, or timber-heads on the gunnel of a pontoon, whereto the relieving-tackles are hooked in the act of careening a ſhip.

ELANCEMENT, or QUETE, the rake of a ſhip: the former of theſe terms is always applied to the ſtem, and the latter to the ſternpoſt. See QUETE.

ELARGIR, to give chace; alſo to fly from a purſuing enemy.

S'ELEVER, to ſtand out to ſea; alſo to claw off from a lee-ſhore.

S'ELEVER *en latitude*. See HAUTEUR.

ELINGUER, to ſling a caſk, bale, or box.

ELINGUES, ſlings of any kind.

ELINGUES *à pattes*, can-hooks.

ELINGUET, the paul of a capſtern or windlas.

ELME. See FEU *Saint-Elme*.

EMBANQUE', to be upon a fiſhing-bank, as thoſe of Newfoundland, &c.

EMBARDER, to ſheer on one ſide or the other; to yaw, or ſteer obliquely. See ELANCER.

EMBARGO. See ARRET.

EMBARQUEMENT, an embarkation.

EMBARQUER, to ſhip; to put goods, ſtores, &c. on ſhip-board.

S'EMBARQUER, to embark, or enter a ſhip.

EMBELLE, the gangway, or that part of the gunnel which is in the waiſt of a ſhip from the gangway to the cheſs-tree or fore-caſtle.

EMBODINURE, or EMBOUDINURE, the puddening of an anchor.

EMBOSSER, to anchor, or moor a ſhip.

EMBOSSURE. a knot formed on the end of a rope, to which a laniard is faſtened; alſo a bend, by which one rope is faſtened to another.

EMBOSSURES, a general name for moorings, ſtoppers, laſhings, and laniards.

EMBOUCHURE, the mouth of a river; alſo the entrance or opening of a bay or gulph.

EMBOUFFETE', clinch-work.

EMBOUQUER, to enter into a ſtreight or paſſage, as through ſeveral iſlands, &c.

EMBRAQUER, to haul, or rowſe any rope

rope into a ſhip; to haul aboard a rope.

EMBROUILLER *les voiles*, to brail up or clue up, any of the ſails.

EMBRUME', foggy weather.

EMMARINE', hardened to the ſea; as, *Matelot* EMMARINE', a caſe-hardened or weather-beaten tar; a veteran ſailor.

EMMARINER *un vaiſſeau*, to man a ſhip, or furniſh her with ſeamen.

EMMIELLER *un étai*, to worm a ſtay.

EMMORTOISER, to fill up a mortiſe with it's tenon.

EMPANNER. See METTRE *en panne*.

EMPATER, to make a ſcarf; to ſcarf two pieces of timber together.

EMPATURE, the ſcarf of two ends of plank or timber.

EMPECHE', foul, or entangled; an epithet applied to a rope, or tackle, when in that ſituation.

EMPENNELLE, a ſmall anchor ſunk ahead of a larger one, to which it is faſtened by a ſmall hawſer, or tow-line, to prevent the large anchor from looſening, or coming home to the ſhip.

EMPENNELLER, to back an anchor, or carry out the *empennelle*.

EMPESER *la voile*, *la mouiller*, to wet the ſails, that they may be enabled to retain the wind more ſteadily.

EMPIRANCE, the deficiency of a ſhip's cargo at the time of delivery; happening either by waſte, decay, damage, &c.

EMPORTER, to carry away a maſt; as, *le grand mât fut emporté*, the main-maſt was carried away, or broken by tempeſtuous weather, &c.

EMPOULETTE. See HORLOGE.

ENCABANEMENT, the tumbling-home of a ſhip's ſide from the lower-deck-beam upwards, to the gunnel.

ENCAPE', embayed, or entered between two capes.

ENCASTILLAGE, the elevation of the fore-caſtle and quarter-deck, together with all the heighth of a ſhip above the gunnel of her waiſt.

ENCASTILLE', deep-waiſted, or frigate-built; as oppoſed to galley-built.

ENCLAVER, to let into a rabbet; as the garboard-ſtreak is let into the keel.

ENCOGNURE, the elbow or angle of a knee or ſtandard.

ENCOMBREMENT, any cumberſome or unweildy goods, which embarraſs the ſtowage of a merchant-ſhip.

ENCOQUER, to faſten upon; as an iron ring, block-ſtrop, or the eye of a bracependent is fixed upon a yard-arm.

ENCOQUURE, the ſituation of an eye of a pendent, or ſtudding-ſail boom-iron, &c. fixed on a yard-arm.

ENCORNAIL, the ſheave-hole in a top-maſt-head, through which the top-ſail-tye is reeved, to hoiſt or lower the top-ſail along the maſt. See alſo CLAN.

ENCOUTURE', elinch-work. See alſo EMBOUFFETE'.

ENDENTE', dove-tailed, indented.

ENDORMI, out of the ſailing-trim; ſpoken of a ſhip which has loſt her uſual velocity or trim. See ERRE.

ENFILER *les cables en virant*, to heave-in the cables by the capſtern.

ENFLECHURES, the rattlings of the ſhrouds.

ENFLEMENT, a ſwell; a rough or ſwelling ſea, produced by a ſtorm, &c.

ENFONCEMENT, beveling, in ſhip-building, hewing timber in a proper and regular curve, according to a mould laid on its ſurface.

ENGAGE', an indented ſervant, who engages to ſerve a limited time, in order to defray the expence of his voyage to a diſtant country.

ENGAGEMENT, the contract, or articles of agreement between the ſeamen and the commander of a merchant-ſhip.

ENGINS. See FRIGATE.

ENGRAISSEMENT, a tenon fixed in a mortiſe: hence, *joindre de bois par* ENGRAISSEMENT, to drive forcibly into a mortiſe; or fit a piece of wood ſo exactly therein, that no vacancy ſhall be left on any ſide.

ENGRENER *la pompe*, to pump the water out of a ſhip's bottom.

ENJALER *une ancre*, to ſtock, or fix the ſtock upon, an anchor.

ENLACURE, the bolting of a tenon into it's mortiſe, by boring a hole and driving a bolt through both, to unite them more ſecurely.

ENMANCHE', arrived, or entered, into the channel.

ENSEIGNE *de vaiſſeau*, an officer under the lieutenant, who executes the duty of the latter in his abſence; alſo the enſign of a ſhip.

ENTENNES, the props, or out-riggers, fixed on the ſide of a ſheer-hulk, to ſupport the ſheers.

ENTRE-PONT. See PONT.
ENTERRER *les futailes*, to ſtow the water-caſks of a ſhip in the ballaſt.
ENTRE'E *d'une riviere*. See EMBOUCHURE.
ENTREMISES, ſmall wedges, or chocks, placed between the whelps of a capſtern, to keep them firm in their places.
ENTREPOT, a commercial harbour, where a magazine or ſtorehouſe is eſtabliſhed, for the reception and exportation of goods; alſo a factory, or ſociety of merchants, in a trading ſea-port.
ENTREPRENEUR, a contractor for building and furniſhing a ſhip, compleatly fitted according to ſtated dimenſions.
ENTRER *dans le port*, to ſail into the harbour.
ENTRE-SABORDS, the planks which form the intervals between the ports of a ſhip's ſide.
ENTRE-TOISE, the tranſoms of a gun-carriage, uſed as ſea.
ENVERGUER, to bend a ſail to it's yard: this phraſe is alſo frequently uſed for bending a ſtay-ſail to it's ſtay.
ENVERGURE, the dimenſions of the ſails with regard to the extent upon the yards: hence *une grande* ENVERGURE implies very ſquare ſails.
ENVOI, the order to the helmſman to put the helm a-lee, in order to bring the ſhip head-to-wind.
EPARS *du pavillon*, the flag-ſtaff, or enſign-ſtaff.
EPAVES. See CHOSES *de la mer*.
EPAULES *d'un vaiſſeau*, the bows of a ſhip.
EPAULEMENT *d'un tenon*, the ſhoulder of a tenon, which enters a mortiſe.
EPAURES, or EPAVRES, the ledges or ſpars, upon which the fore-ſheets and ſtern-ſheets of a boat are framed.
EPE'ES, handſpecs. See BARRES *de virevaut*.
EPERON, or POULAINE, the cut-water, or knee of the head, which is compoſed of ſeveral pieces, as *la gorgere*, *le digon*, *les jottereaux*, *la courbe capucine*, & *les herpes*. See GORGERE, &c.
EPINEUX, rocky above water; full of rocks and breakers.
EPISSER, to ſplice a rope.
EPISSOIR, or CORNET *d'épiſſe*, a marline-ſpike, or ſplicing fid of hard wood.
EPISSURE, a ſplice of any kind.
EPISSURE *courte*, a ſhort ſplice.
EPISSURE *longue*, a long ſplice.
EPITE, a ſmall pin or wedge, driven into the end of a tree-nail, to ſwell it.
EPITIE', a ſhot-garland fixed between the guns, on the ſhip's ſide.
EPONTILLE, a ſtanchion. See alſo BATAYOLLES.
EPONTILLES *d'entre-pont*, the ſtanchions between decks.
EQUIPAGE, the crew of a ſhip of war, comprehending the officers, ſailors, ſeamen, marines, ordinary men, ſervants, and boys; but excluſive of the captain, lieutenants, and enſign.
EQUIPAGE *d'attelier*, a general name for the machinery and furniture of a dock-yard, or ſhipwright's wharf, as cranes, gins, ſcrews, &c.
EQUIPAGE *de pompe*, the pump-gear, or furniture of the pumps.
EQUIPE, the number or ſet of boats belonging to one waterman or wherryman.
EQUIPEMENT, the fitting out of a ſhip, or furniſhing her with men, proviſions, ſtores, &c.
EQUIPER, to man, arm, and provide a ſhip with whatever is neceſſary to proſecute war, or commerce; excluſive, however, of the cargo itſelf.
ERISSON, a grappling, or anchor with four claws, uſed in low-built veſſels, particularly gallies.
ERRE, the ſailing trim of a ſhip, or the ſtate by which ſhe is beſt qualified for the purpoſes of ſailing.
ERSE *de poulie*. See ESTROPE.
ERSES, or E'TROPES *d'affût*, the ſtrops or eye-bolts in the train of a gun-carriage, to which the train-tackles are hooked.
ESCADRE, a ſquadron of ſhips of war.
ESCALE. See ECALE.
ESCANDOLA, the cabin of the *argouſin* of a row-galley.
ESCARBITE, a caulker's oil-box; or the caſe which contains the thrums ſteeped in oil, to clean his irons when he is at work.
ESCARPE', ſteep-to; expreſſed of a ſhore which may be approached without danger.
ESCARPINE, a ſort of muſketoon uſed by privateers and pirates.
ESCHILON. See ECHILON.
ESCOPE, or rather ECOPE, a ſkeet to wet

wet the ſails, or the ſhip's ſide. See ECOPE.

ESCOT, the aftmoſt lower corner of a lateen-ſail.

ESPALE, the aftmoſt bank or thwart of a row-galley.

ESPALIER, the perſon who rows with the handle of the oar, or who is at the inner extremity, and riſes at every ſtroke to guide it.

ESPALMER, to pay the bottom of a veſſel with ſope, &c. after having breamed her.

ESPOIR, a ſmall piece of artillery, formed of braſs, and mounted on the deck of a ſhip, more particularly the *caraques* of Portugal.

ESPONTON, a ſort of half-pike, employed to defend a ſhip from the aſſault of boarding.

ESPOULETTE, a tin canteen, or caſe, to carry fine powder to the cannon, in the time of battle.

ESQUAINS, the ſpirketing of the quarter-deck and fore-caſtle.

ESQUIF, a ſkiff, yawl, or ſmall boat belonging to a ſhip.

ESSES, the forelocks which are driven through the axletrees of the gun-carriages, to confine the wheels in their proper places.

ESSIEU, or rather AISSIEU, *d'affût de bord*, the axis of a gun-carriage, by which it reſts upon the wheels.

ESSUIEUX. See ECOUVILLON.

ESTACADE, a boom, ſtrong chain or cable, laid acroſs the mouth of a harbour, to prevent an enemy's entering it.

ESTAINS, the faſhion-pieces of the ſtern.

ESTANCE *à taquets*, a Samſon's-poſt. See alſo PIE'DROIT.

ESTANCES. See EPONTILLES *d'entrepont*.

ESTERRE, a ſmall haven or creek.

ESTIME, the dead-reckoning: whence, *Erreur dans l'*ESTIME, the errors of a dead-reckoning.

ESTIVE, the trim or diſpoſition of the cargo, in a ſhip's hold.

ESTOUPIN, ETOUPIN, or VALET, the vent of a cannon, formed of oakum.

ESTRAN, a name ſometimes given to a flat and ſandy ſea-coaſt.

ESTRAPADE *marine*, a naval puniſhment. See CALE.

ESTRAPONTIN, an Indian hammoc. See HAMAC.

ESTRIBORD, or STRIBORD. See STRIBORD.

ESTROPER, to reeve a rope through any block.

ESTROPES, a general name for block-ſtrops.

ESTROPES *d'affût*. See ERSES.

ESTROPES *des marche-pieds*, the ſtirrups of the horſes.

E'TABLI *ſur ſes amarres*, ſettled, moored, or ſtationed in a port.

E'TAI, the ſtay of a maſt.

E'TAI *du grand mât*, or *grand étai*, the main-ſtay.

E'TAI *du grand mât de hune*, the main top-maſt-ſtay.

E'TAI *du grand perroquet*, the main-top-gallant ſtay.

E'TAI *du mât d'artimon*, the mizen-ſtay.

E'TAI *du mât de hune d'avant*, the fore-top-maſt-ſtay.

E'TAI *du miſaine*, or *du mât de miſaine*, the fore ſtay.

E'TAI *de perroquet d'artimon*, or *de foule*, the mizen-top-maſt-ſtay.

E'TAI *de voile d'étai*, a ſtay-ſail-ſtay.

Faux-E'TAI, a preventer-ſtay.

ETALER, to anchor during the interval of a contrary tide, in a foul wind; with intent to purſue the courſe the next favourable tide.

ETALINGUE, the clinch of a cable, or that part which is bent to the anchor.

ETALINGUER, to clinch the cable to it's anchor.

ETAMBOT, the ſtern-poſt of a ſhip.

ETAMBRAIES, the holes or ſcuttles in a ſhip's decks, through which the maſts are let down; alſo the partners of the maſt.

ETAMINE, buntine; the cloth of which a ſhip's colours are made.

ETANCHER, to ſtop a leak; alſo to pump the water out of a ſhip.

ETANÇONS, a ſort of ſtanchions. See EPONTILLES.

ETAPE, a mart, or place of public ſale for merchandiſe; alſo a commercial port.

ETARCURE, drop, a name given to the depth of the principal ſails. See CHUTE.

ETAT *d'armement*, a liſt, or regiſter, containing the number of ſhips, and officers, deſtined for a naval armament; as alſo the quality and proportion of cordage, ſails, and furniture of a ſhip, &c.

Capitaine du grand ETAT, or *du Haut-bord*, a captain of a ſhip of the line of battle.

Capitaine du petit ETAT, a maſter and commander.

ETENDARD, the royal ſtandard, carried by the principal galley of France.

ETE'SIES, or *vents*, ETE'SIENS, trade-winds, or monſoons.

E'TOUPE, oakum, or oakham.

E'TOUPE *blanche*, white oakum, or that which is formed of untarred ropes.

E'TOUPE *goudronnée*, black oakum, which is made of tarred ropes.

ETRAQUE, the limited breadth of a ſtreak, or plank, uſed in ſhip-building.

ETRAQUE *de gabord*, the garboard-ſtreak, or the breadth of the ſtreak next to the keel.

ETRAVE, the ſtem of a ſhip.

ETRE *à flot*, the ſtate of being buoyed up by the water.

ETRE *à la gamelle*, to meſs with the common ſailors.

ETRE *au deſſus du vent*. See AVANTAGE *du vent*.

ETRE *banqué*, or *débanqué*, to be upon, or off, the grand bank of Newfoundland.

ETRE *dans les eaux d'un vaiſſeau*, to be in the wake of a ſhip.

ETRE *de bout au vent*. See ALLER *de bout au vent*.

ETRE *flanc à flanc*. See PROLONGER.

ETRE *à ſec*, to be under bare poles.

ETRE *pratique de la mer*, to be accuſtomed, or inured to the ſea.

ETRIER, the lower link of the chains of a ſhroud, which is bolted to the wales.

ETRIERS, ſtrops formed of a piece of rope. See ESTROPES.

ETUVE, a ſtove in a dock-yard, fitted with furnaces and cauldrons, for tarring cordage, &c.

EVENT, the windage of a cannon, or the difference between the diameter of the bore and the diameter of the ſhot.

EVENTER *les voiles*, to fill the ſails. See SERVIR.

EVITE'E, the channel of a river, or the breadth of a channel.

EVITE'E, a birth, or ſufficient ſpace wherein a ſhip may ſwing round at the length of her moorings.

EVITE'E is alſo the birth or ſpace between two ſhips at anchor, or between one ſhip and ſome neighbouring object; likewiſe the ſweep or ſwing of a ſhip round her anchor, at the length of her cable.

EVITER *à marée*, to ſtem the tide or current.

EVITER *au vent*, to carry the head to windward, to ſtem the wind.

EVOLUTIONS, the movements of a fleet in forming the line of battle, or the orders of retreat, or ſailing.

EXERCICE, the naval exerciſe, or the preparatory practice of unmooring, ſetting ſail, ſtowing the anchors, &c.

EXERCICE *de canon*, the exerciſe of the great guns.

EXPEDITION *maritime*, a cruiſe or long voyage at ſea.

F.

FABRIQUE, the particular built or ſtructure of a ſhip, either with regard to her figure, or to the place where ſhe was fabricated.

FABRIQUER, to build or conſtruct a ſhip.

FAÇONS, the narrowing of a ſhip's floor afore and abaft.

FAGOT. See BARQUE.

FAIRE *abattre*. See ABATTRE.

FAIRE *abordage*. See ABORDAGE.

FAIRE *aiguade*, or FAIRE *de l'eau*, to water a ſhip, or procure the proviſion of water neceſſary for a voyage, &c.

FAIRE *bon bord*, or *bonne bordée*, to make a good board or tack, when turning to windward.

FAIRE *canal*, to ſail through a ſtreight or narrow channel. This phraſe is more peculiar to the gallies than to other veſſels.

FAIRE *capot*, to overſet, or overturn, at ſea.

FAIRE *chapelle*. See CHAPELLE.

FAIRE *chaudiere*, to cook and prepare the ſeamen's victuals.

FAIRE *courir*, or *recourir*, to let run, or over-haul any rope. It is more particularly applied to the bowlines.

FAIRE *dégrat*, to quit a ſtation, on the banks

banks of Newfoundland, where there are few fiſh, in order to ſearch for a better fiſhing-place.

FAIRE *des feux*, to hang out lanthorns, as ſignals of diſtreſs, in different places of a ſhip, in the night.

FAIRE *de bois*, *de biſcuit*, *de vin*, *de la farine*, &c. to furniſh a ſhip with the proviſion of wood, bread, wine, flour, &c.

FAIRE *eau*, to leak; to make water.

FAIRE *eſcale*, to touch at any intermediate port in the courſe of a voyage.

FAIRE *feux des deux bords*, to cannonade, or fire on an enemy, from both ſides of a ſhip.

FAIRE *filer un cable*, to pay out a larger ſcope of cable.

FAIRE *forcedes voiles*, to make ſail; to crowd ſail.

FAIRE *force des voiles & rames*, to crowd ſail, and exert all the force of the oars.

FAIRE *gouverner*, to run the ſhip, or to ſuperintend and direct the helmſman.

FAIRE *honneur*. See HONNEUR.

FAIRE *la courſe*. See ALLER *en courſe*.

FAIRE *la grande bordée*, to ſet the half-watch, or the watch of half the ſhip's crew, as at ſea.

FAIRE *la petite bordée*. See BORDE'E.

FAIRE *le nord*, *le ſud*, &c. to ſtand to the northward, ſouthward, &c.

FAIRE *pavillon*, to carry a broad pendent, as the commodore or commander in chief of a ſquadron, &c.

FAIRE *pavillon*, or *banniere d'une nation*, to hoiſt or ſhew the colours.

FAIRE *pavillon blanc*, to diſplay a flag of truce.

FAIRE *petites voiles*, to be under ſmall ſail; to carry little ſail.

FAIRE *plus des voiles*, to make ſail; to make more ſail.

FAIRE *quarantaine*, to perform quarantine.

FAIRE *route*, to ſtand onward on the courſe.

FAIRE *ſa route en droiture*. See ALLER *en droiture*.

FAIRE *ſervir*, to fill the ſails; to make ſail, after having lain-by for ſome time.

FAIRE *ſon quart*. See QUART.

FAIRE *tete*, to carry the head to a current or wind.

FAIRE *une deſcente*, to invade, or make a deſcent upon, an enemy's country.

FAIRE *voiles*, to depart and ſet ſail; to get under ſail.

FAIS COURIR, keep her full! the order to the helmſman to ſteer the ſhip ſo as not to ſhake in the wind when cloſe hauled. See alſo DE'FIE *du vent*.

FAIT, fixed, or ſet in; an epithet applied to the wind, when it is ſuppoſed to be ſettled for a conſiderable period of time.

FAIX, or FAIX *de pont*. See ILOIRES.

FALAISE, a ſteep and bold ſhore.

FALAISER, to break or burſt over the rocks, &c. underſtood of the waves upon a ſea-coaſt.

FANAL, a light-houſe on the ſea-coaſt. See PHARE.

FANAL is alſo the poop or quarter-lanthorn of a ſhip.

FANAL *de hune*, the top-lanthorn.

FANAL *de ſoute*, the light-room of a ſhip's magazine.

FANAUX *de combat*, the lanthorns uſed between the guns, in time of battle.

FANAUX *pour ſignaux*, ſignal-lanthorns.

FANON, the balance of the mizen.

FARAILLON, a ſmall ſand-bank.

FARAIS, a ſort of nets for fiſhing of coral.

FARDAGE, the dunnage laid in a ſhip's hold, when ſhe is to be laden in-bulk; as with corn, ſalt, &c.

FARGUES, or FARDES, the ſides of a ſhip's waiſt, from the main-deck upwards to the gunnel.

FASIER, to ſhiver the ſails. See BARBEYER.

FAUBER, a ſwab. Whence

FAUBERTER, to ſwab a ſhip's decks, &c.

FAUSSE *écoute*. See E'COUTES *de bonnetes en étui*.

FAUSSE *étrave*, or rather CONTRE *étrave*, the ſtemſon.

FAUSSE *galerie*. See GALERIE.

FAUSSE *quille*, a piece of timber placed on the top of the keel, in the interval between the dead-wood afore and abaft: alſo the falſe keel.

FAUSSES *lances*, wooden guns, fixed on a ſhip's ſide to deceive an enemy in time of war.

FAUX *côté*, the ſide of a ſhip which heels moſt, when ſhe is lap-ſided, or not trimmed upright by her cargo.

FAUX *étai*, a preventer-ſtay. It is alſo a general name for the ſtay-ſail-ſtays.
FAUX *étambot*, the back of the ſtern-poſt.
FAUX *feux*, ſignals made by falſe fires.
FAUX *pont*, the orlop-deck, or platform.
FAUX *racage*, a preventer-parrel, uſed to confine the yard to the maſt, in caſe the parrel ſhould be ſhot away in battle. This machine is never uſed in Engliſh ſhipping.
FAUX *ringeot*. See SAFRAN.
FAUX *ſabords*, falſe ports, painted in a ſhip's ſide, to deceive an enemy. See FAUSSES *lances*.
FAYFENA, a ſort of Japoneſe galley, which uſually rows with about thirty oars.
FELOUQUE, an Italian felucca.
FEMELLES, the googings uſed to hang the rudder on the ſtern-poſt.
FE'MELOTS, the googings of a boat's rudder, &c.
FER, a name given to the anchors of a row-galley.
FER *de chandelier de pierrier*, the iron-ſocket in which the ſwivel of a pedrero reſts and traverſes.
FER *de girouette*, the ſpindle which ſupports the vane at the maſt-head.
FERLER, to furl, hand, or ſtow the ſails.
FERMETURE. See the ſubſequent article.
FERMURES, the planks of a ſhip's ſide in the intervals between the wales.
FERRURE, the iron-work of a ſhip, as chains, bolts, ſpikes, nails, &c.
FERRURE *de chaloupe*, the iron-work employed to fit the maſt, boom, and rudder of a long-boat.
FERRURE *de gouvernail*, the pintles and googings of a ſhip's rudder.
FERRURE *de ſabords*, the hinges of the gun-ports.
FERS *d'arcboutans*, or *de boute dehors*, the gooſe-neck of a ſtudding-ſail-boom; alſo the fork of a fire-boom.
FERS *pour les criminels*, bilboes, or fetters, to confine criminals.
FESSES, a name uſually given to the buttocks, or prominent quarters, of a Dutch flight or cat.
FEU *grégeois*, an artificial fire, or inflammable compoſition, uſed ſometimes to burn an enemy's ſhip in battle.
FEU *ſaint-Elme*, a corpoſant, ſometimes called Caſtor and Pollux.
FEUX *d'artifice*, artificial fires uſed at ſea.
FICHURE, a fiſh-gig, or ſtaff with ſeveral grains or prongs, uſed to ſtrike fiſh, at ſea, and called alſo FOESNE, which ſee.
FIGALE, an Indian veſſel with one maſt, and uſually rowed with oars, or paddles.
FIGULES, or FIGURES. See ENFLECHURES.
FIL *de carret*, a rope-yarn.
FIL *de voile*, *de tré*, or *de trévier*, twine for ſail-making.
FILADIERE, a ſmall flat-bottomed boat uſed on the Garonne.
FILANDRES, ſea-weeds which adhere to a ſhip's bottom that has been long upon the ſea.
FILARETS, rails uſed to extend the nettings on a ſhip's quarter, waiſt, or fore-caſtle.
FILE *bouline*, check the bowline! the order to eaſe-off, or let go the bowline, when the ſhip veers before the wind.
Ne FILE *plus amarre!* keep faſt the cable! ſtopper the cable! veer no more!
FILER, to ſlacken, or lower gradually.
FILER *du cable*, to veer out, or veer away the cable.
FILER *d'écoute*, to eaſe-off a ſheet. See alſo LARGUER.
FILER *le cable bout par bout*, to veer away the cable to the end, to veer out the cable end-for-end.
FILER *ſur ſes ancres*, to pay out more cable to the anchors.
FILER *toute l'écoute*, to let fly a ſheet, as in a ſquall of wind which endangers the ſhip.
FILET, a ſort of moulding on a ſhip's ſide.
FILET *de merlin*, marline; a ſmall line ſo called. See MERLIN.
FILEUX, or TAQUET. See TAQUET.
FIN *de voiles*, ſwift of ſailing.
FISCAL, or *Avocat*-FISCAL, an officer whoſe duty is ſimilar to that of the judge-advocate of a court-martial at ſea.
FISOLLE, or FICELLE, whipping-twine; alſo a fox, formed of a ſingle rope-yarn.
FLAMME, a broad-pendent, diſplayed as a mark of diſtinction, ornament, or ſignal.
FLANC *de vaiſſeau*, the ſide of a ſhip.
Etre FLANC *à* FLANC, to lie alongſide of; to be broadſide and broadſide.

FLASQUES,

FLASQUES, the cheeks or ſides of a gun-carriage.

FLECHE *de l'éperon*. See HERPES and LISSES *de poulaine*.

FLETTE, a ſort of punt, or flat-bottomed boat, uſed in the paſſage of a river, or for carrying goods, &c.

A FLEUR *d'eau*, level with the ſurface of the water.

FLEURS, the riſing-line of the floor-timbers.

FLIBOT, a ſmall Dutch veſſel, which uſually carries about one hundred tons, and has a main-maſt and fore-maſt, without any top-maſt.

FLIBUSTIERS, or CORSAIRES, free-booters or bucaneers.

FLORER *un vaiſſeau*, or *lui donner les* FLEURS, to pay a ſhip's bottom; to give her a clean bottom by careening, &c.

FLOT, the flood-tide.

Demi-FLOT, half-flood.

Il y a FLOT, the tide flows, it is flowing water.

Etre à FLOT, to float, to be afloat, upon the water.

FLOT, or FLOTS, the ſurge or waves of the ſea. As,

Abandonner un vaiſſeau à la merci des FLOTS, to let a ſhip drive at the mercy of the waves and winds.

Ligne de FLOTTAISON, the water-line. See LIGNE *d'eau*.

FLOTTE, a fleet of ſhips.

FLOTTER, to ſwim or float upon the ſurface of the water.

FLOTTILLE, a ſmall ſquadron of Spaniſh ſhips, uſually ſtationed in America.

FLUTE, a flight, or fly-boat, called alſo PINQUE, but differing in ſhape from the Engliſh ſhip ſo called.

FLUX and REFLUX, the tides of flood and ebb.

FOC, a jib.

Le grand FOC, the ſtanding jib.

FOESNE, a fiſh-gig or forked inſtrument uſed to ſtrike fiſh withal. See FICHURE.

FOGONE, a ſort of box to cover the chimney of a merchant veſſel.

FOIT *de mât*, the height of a maſt, expreſſed of a very taunt or high maſt.

FONCET, a long flat-bottomed barge, for carrying goods in a river, &c.

FOND, the ground or bottom of the ſea.

FOND *d'affût*, the ſole or bottom of a gun-carriage.

FOND *de cale*, the hold of a ſhip.

FOND *de bonne tenüe*, good holding-ground, or good anchoring-ground.

FOND *de cours*, or *cure*, a bottom of fine ſand.

FOND *de la hune*, the platform or flooring of a top.

FOND *de mauvaiſe tenüe*, bad anchoring-ground.

FOND *de roche*, rocky ground.

FOND *de ſon*, a bottom where the ſand appears like bran.

FOND *de voile*, the bunt of a ſail.

Point de FOND, out of ſoundings.

FOND *d'aiguilles*, a bottom or ground abounding with pointed ſhells.

FOND-*haut*, or *haut*-FOND, a ſhoal, or ſand-bank, with ſhallow water.

FOND *d'une baſſe voile*, the foot of a lower ſail.

Prendre FOND, *toucher*, *relâcher*, to anchor, or touch at a port or road in the courſe of a voyage.

Aller à FOND, to ſink; to go to the bottom.

Plat-FOND *d'un vaiſſeau*, the floor or bottom of a ſhip.

FOQUE *de beaupré*. See FOC.

FORBAN, a pirate. See PIRATE.

FORCE *de voiles*, *faire* FORCE *de voiles*, to make ſail, to croud ſail

FORCER *de rames*, to row ſtrongly, ſo as to redouble the efforts of the oars.

FORCER *des voiles*, to croud ſail; to carry a preſs of ſail. See alſo FAIRE *force*, &c.

FORCHETTE, a pair of ſheets, or machine to maſt or diſmaſt a ſhip.

FORME, a wet dock.

FORME *en talut*, a ſlip, or declivity on the banks of a river, where ſhips are built.

FORMES *de vaiſſeaux*. See BALOIRES.

FORT *de virer*, a term amongſt the French common ſailors, which anſwers to, avaſt-heaving.

FORTUNE *de mer*, a name given to any unfortunate accidents or diſaſters of the ſea.

FORTUNE *de vent*, a tempeſt or violent ſtorm, in the dialect of Provence.

Voile de FORTUNE, the ſquare or lug-ſail of a galley or tartane, in the Mediterranean. See TREOU.

FOSSE, a creek or ſmall haven on the ſea-coaſt, where ſhips may come to anchor.

FOSSE is alſo a place cut of ſoundings on the edge of a bank.

FOSSE *au lion*, the boatſwain's ſtore-room, in the fore part of a ſhip.

Fosse *aux cables*, the cable-ſtage, or cable-tier, in the orlop, &c.

Fosse *aux mâts*, a maſt-pond, or place where the maſts are kept afloat in ſalt water, in a dock-yard.

FOUETTER, to ſtrike or ſlap back againſt the maſt; expreſſed of the ſails of a ſhip, when they are firſt taken aback.

FOUGON, the coboſe, grate, or fire-place of a ſhip, in the language of Provence.

FOUGUE, *mât de* Fougue. See Artimon.

Vergue de Fougue, the croſs-jack-yard. See Vergue-seche.

Perroquet de Fougue, the mizen-top-ſail.

FOULOIR, an inſtrument which ſerves as a rammer and ſponge of a cannon.

FOUR, a ſort of breaſt-hook or knee uſed to ſtrengthen the bows of a boat.

FOURCATS, the crotches, or floor-timbers, placed in the after and fore hold.

FOURCHE *de potence de pompe*, the ears of a common pump.

FOURCHES *de carene*, breaming-hooks, or forks uſed to hold the flaming furze or faggots to a ſhip's bottom when graving.

FOURRER, to ſerve the cables as with plat, rounding, keckling, &c.

FOURRURE, a general name for ſervice of leather, plat, canvas, or ropes.

FOYER, a light-houſe; a light or fire on the ſea-coaſt, to direct ſhipping in the night. See Phare.

FRAICHEUR, a freſh wind or ſteady breeze.

FRAICHIR, to freſhen, or blow ſtronger; expreſſed of an increaſing gale.

FRAIS, a light or ſmall breeze.

FRANC *d'eau*, pumped-out, or free of water. As,

Rendre la navire Franc *d'eau*, to pump the water out of a ſhip's bottom; to free her by the pumps.

FRANC-*funin*, a white hawſer, or large untarred rope, uſed for ſeveral purpoſes.

FRANCHE-*bouline*. See Au *plus près*.

FRANCHIR *la lame*, to head the ſea; to fail againſt the ſetting of the ſea.

Franchir *l'eau*. See *Rendre le navire* Franc, &c.

Franchir *une roche*, to paſs over, or forge off from a rock, after having ſtruck, touched, or reſted upon it.

FRAPPER, to fix-on upon their maſt-heads, &c.

FRE'GATE, a frigate of war: according to the arrangement of the French navy, this claſs comprehends all veſſels of war from 50 to 20 guns.

Fre'gate *d'avis*, a ſloop of war, packet-boat, or tender.

Fre'gate *legere*, a light or ſmall frigate, carrying from 30 to 20 guns.

Fregate', frigate-built, or formed with a deep waiſt.

FREGATON, a ſort of Venetian ketch.

FREINS. See Refreins.

FRELER, to furl, or hand any ſail. See Ferler.

FREQUENTER *un port*, to trade often to one harbour.

FRET, the freight or hire of a ſhip; called alſo *fretement*.

FRETER, to freight or hire a ſhip.

FRETEUR, the proprietor or owner of a ſhip, to whom the freight for any voyage is paid.

FRIBUSTIER. See Flibustiers.

FRISER *les ſabords*, to line the gun-ports with baize or kerſey, ſo as to prevent the water from entering at ſea.

FRISONS, cans or jugs.

FRONTEAU, the breaſt-work, a moulding, ornamented with ſculpture, and ſometimes a ſort of baluſtrade, reaching athwart the ſhip from one ſide to the other, and ſerving to terminate the quarter-deck and poop at the fore-end, and the fore-caſtle both afore and abaft.

FRONTON. See Ecusson and Miroir

FUNER *un mât*, to fix the ſtanding rigging on the maſt-head.

FUNIN, cordage of a certain ſize, which is particularly uſed for the running-ropes, and ſometimes for the ſtanding rigging. See Franc-*funin*.

FURIN, the offing; the high ſea; deep water; as,

Mettre un vaiſſeau en Furin, to carry, or conduct a ſhip out to ſea, or over the bar, &c. of a harbour into deep water.

FUSEAUX, or Taquets *de cabeſtan*. See Taquets.

FUSE'E *dans un brûlot*, the aſſemblage of troughs wherein the train of a fire-ſhip is laid.

Fuse'e *d'aviron*, a mouſe raiſed on the middle of an oar, to confine it in the ſtrop or grommet.

FUSE'E *de vindas*, or *de cabeſtan volant*, the barrel or body of the windlaſs, in which the handſpees are lodged to turn it about.

FUSE'ES *de tournevire*, the mouſes of the voyol.

FUSTE, a low and capacious veſſel navigated with ſails and oars.

FUT *de girouette*, the vane-ſtock.

FUTAILLE, the water and proviſion-caſks of a ſhip.

G.

GABARE, GABARRE, a ſort of flat-bottomed lighter or barge, uſed in the river Loire, to lade and unlade ſhipping.

GABARIER, a lighter-man, or the perſon who conducts the *gabare*.

GABARI, a ſort of model to repreſent the outline and thickneſs of the frames of a ſhip's timbers. See COUPLE.

Premier GABARI, or rather *maître* GABARI, the midſhip-frame.

GABARIS *de l'arriere*, the after-frames.

GABARIS *de l'avant*, the fore-timbers or frames.

GABIE, the top, in the dialect of Provence.

GABIER, the captain of the main, or fore-top.

GABORD, the garboard-ſtreak, or plank next to the keel in a ſhip's bottom.

GABURONS. See JUMELLES.

GACHER. See RAMER.

GAFFE, a boat-hook. See CROC.

GAFFER, to hook and draw any thing near with a boat-hook.

GAGNER *le vent*, or GAGNER *au vent*, *&c.* to gain the wind of; to get to windward of. See AVANTAGE *du vent*.

GAGNER *ſur un vaiſſeau*, to fore-reach, or gain ground of ſome ſhip in company.

GAGNER *un port*, *un havre*, *un degre de latitude*, to ſecure a harbour, or arrive at a rendezvous, without interruption.

GAILLARD, or CHATEAU, the elevation of the quarter-deck or fore-caſtle.

GAILLARD *d'avant*, the fore-caſtle.

GAILLARDELETTE, or GALAN, the flag of the fore-maſt.

GAILLARDET, a ſort of broad pendent diſplayed at the fore-maſt-head.

GAINE *de flamme*, the canvas edging fixed on the head of a pendent, to contain the ſtock.

GALAUBANS, the back-ſtays of the top-maſts and top-gallant-maſts.

GALE'ASSE, a galleaſſe, or great galley of Venice.

GALERE, a row-galley.

GALERE *patrone*, the ſecond of the gallies of France, Tuſcany and Malta.

GALERIE, the gallery or balcony of a ſhip's ſtern, or quarter.

GALERIES *du fond de cale*, certain paſſages formed cloſe to the ceiling in the hold of a ſhip of war, for the diſcovery of leaks. See ACCOURSIE.

Fauſſe GALERIES, the badges of the quarters in a ſmall ſhip.

GALET, a ſea-coaſt abounding with flints.

GALETTE, round and flat ſea-biſcuit.

GALION, a galleon, or Spaniſh ſhip of war of the Indian fleet.

GALIOTE, a half-galley; alſo a Dutch fiſhing veſſel.

GALIOTE *à bombes*, a bomb-ketch.

GALIOTE *ſervant de yacht d'avis*, a packet or advice-boat.

GALOCHE, a ſnatch-block; alſo a hole made in the coamings of a hatchway, wherein the cable lies when the hatches are laid.

GALOCHE likewiſe implies the ſtock or frame into which the feet of the ſheet-kevels are fixed upon the ſhip's ſide.

GAMBES *de hune*, the ſuttock-ſhrouds.

GAMELLE, a bowl or platter to hold the ſailor's victuals; alſo a meſs or company of ſeamen who eat together.

Etre à la GAMELLE. See ETRE, &c.

GANTERIAS. See BARRES *de hune*.

GARANT, a tackle-fall, or the part upon which the labourers pull in hoiſting, &c.

GARBIN, the ſouth-weſt wind, in the dialect of Provence.

GARCETTES, a general name for all ſorts of plaited cordage; as,

Maitreſſe-GARCETTE, the bunt-gaſket, or middle-gaſket of a yard.

GARCETTES *de bonnettes*, the keys or buttons of the bonnets.

GARCETTES *de fourrures de cables*, plat, for ſerving the cables.

GARCETTES *de ris*, the reef-points of a ſail.

GARCETTES *de tournevire*, the nippers of the cable, by which it is attached to the voyol.

GARCETTES *de voiles*, the gaſkets which are uſed to furl the ſails.

GARÇONS *de bord*, the ordinary ſeamen in a ſhip of war or merchantman.

GARDES, or QUART, the watch.

GARDE *au mât*, a perſon who looks out at the maſt-head.

GARDE-*corps*, the ſide-nettings, or quarter-nettings of a ſhip.

GARDE-*côte*, a ſhip of war which cruiſes on the coaſt of a nation, to protect it from the inſults of enemies, or pirates.

GARDE *des côtes*, a military guard, employed to defend the coaſts in time of war.

GARDE-*feux*, powder-cheſts, or cartridge-cheſts.

GARDE *de la marine*, a midſhipman, or naval cadet.

GARDE-*magaſin*, an officer ſimilar to the ſtore-keeper of a dock-yard.

GARDE-*ménagerie*, a ſhip's poulterer, or perſon who takes care of the beaſts, fowls, &c. in a ſhip.

GARDER *un vaiſſeau*, to dog, purſue, or watch the motion of an enemy's ſhip, ſo as to prevent her from eſcaping: alſo to guard and protect a ſhip.

GARDIEN *de la foſſe à lion*, the boatſwain's yeoman.

GARDIENNERIE, or CHAMBRE *des canoniers*, the gun-room. See SAINTE-BARBE.

GARDIENS, *matelots*-GARDIENS, the ordinary men of a dock-yard, under the command of the maſter attendant.

GARES, certain ſmall docks or retreats, formed on the ſide of a narrow canal, to contain boats, that others may paſs the more eaſily.

GARGOUSSE, or GARGOUCHE, the cartridge of a cannon or other fire-arm.

GARGOUSSIERE, a cartridge-box, or cartouch-box, for ſmall arms.

GARITTES, the top-brims, or top-rims.

GARNIR, or rather GRE ER. See GRE'ER.

GARNIR *le cabeſtan*, to rig the capſtern, by fixing the voyals, bars, pins, and ſwifter, ſo as to be ready for heaving.

GARNITURE, the ſtanding and running-rigging of a ſhip, together with the ſervices of the yards.

GATTE, the manger of a ſhip.

GAVITEAU, a buoy, in the dialect of Provence. See BOUE'E.

GENOU *de la rame*, the loom of an oar.

GENOUX *de fond*, the lower futtocks of the timbers.

GENOUX *de pourques*, the lower futtock-riders.

GENS *de l'equipage*. See EQUIPAGE.

GENS *de mer*, a general name for mariners.

GENS *de munitionnaire*, the ſteward's crew or aſſiſtants.

GERSEAU, a block-ſtrop. See ESTROPE.

GIBELOT, the ſtandard which faſtens the cut-water to the ſtem; called alſo, and more properly, COURBE *capucine*.

GINDANT. See GUINDANT.

GIROUETTES, the vanes of the maſt-heads.

GIROÛETTES *quarées*, very broad vanes.

GISEMENT, the bearings of coaſts or latitudes, with reſpect to each other, or to ſome diſtant object.

GLAÇONS, or *bancs de glace*, flakes, or iſlands of ice.

GOLFE, a gulf of the ſea, as of Mexico, of Lyons, &c.

GONDS, the gudgeons, by which the rudder is hung to the ſtern-poſt. See FERRURE *de gouvernail*.

GONDOLE, a gondola of Venice.

GONDOLIERS, the maſter and crew of a gondola.

GONNE, a ſea-caſk ſomewhat larger than a barrel.

GORET, or GORRET, a hog, or large bruſh to ſcrub the ſhip's bottom under water.

GORETER, to hog a veſſel; to apply the hog to her bottom.

GORGERE, or TAILLEMER, the foremoſt and loweſt part of the cut-water, or knee of the head.

GOURDON,

GOUDRON, or GOUDRAN, tar.
GOUDRONNER, to tar a ſhip, or pay her ſides with tar.
GOUELETE, a ſchooner.
GOUFFRE, a gulf, race, or whirlpool; as the race of Portland, &c.
GOUJURE, the notch or channel cut round the outſide of a block or dead-eye, to receive the ſtrop or rope which is fixed therein.
GOUJURE *de chouquet*, the hole in a cap, through which the hiliards of a ſail is ſometimes reeved.
GOULET, the ſtrait entrance of a harbour.
GOUPILLE, the forelock of a bolt. See CLAVETTE.
GOURDIN, a cobbing-board, uſed to puniſh the ſlaves in the gallies.
GOURMETTE, a ſhip-boy, ſervant, or apprentice, in the dialect of Provence; alſo a watchman appointed by the merchants to take care of the goods in a lighter till they are ſhipped or landed.
GOURNABLES, tree-nails.
GOURNABLER *un vaiſſeau*, to drive the tree-nails into a ſhip's ſides, or bottom.
GOUTIERE, or TIRE-POINT, the water ways of the decks.
GOUVERNAIL, the helm or rudder of a ſhip.
GOUVERNAL *envoié*, alee, ſtate of the helm when puſhed to the ſhip's lee-ſide, in order to put her about.
GOUVERNE *où tu as le coup*, or *à tel air de vent*, thus boy, thus! or, ſteady as you go! the order to ſteer the ſhip exactly as ſhe ſtems, or carries her head.
GOUVERNEMENT, the navigation or ſteerage of a ſhip.
GOUVERNER, to ſteer a ſhip or boat.
GOUVERNER *au nord*, to ſteer northward.
GOUVERNEUR, or TIMONNIER, the helmſman or ſteerſman.
GRAIN *de vent*, a ſudden ſquall of wind or rain, or of both.
GRAIN *peſant*, a heavy or violent ſquall.
GRAND *mat*, the main-maſt of a ſhip or boat.
GRAPIN, a grapling or grapnel.
GRAPIN *à main*, or GRAPIN *d'aberdage*, a fire-grapling, or grapling of the yard-arm.
GRAPINER, to warp a veſſel towards a ſtake of ice, by graplings and ropes.

GRAS *de mer*, foul water, diſcoloured water at the mouth of a river, &c.
GRASSE-*bouline*. See BOULINE.
GRATTER *un vaiſſeau*, to ſcrape a ſhip; whence.
GRATOIR, a ſcraper.
GRAVE, a platform of flints, &c. whereon to dry fiſh in Newfoundland.
GRE'EMENT, a general name for the rigging, comprehending alſo the maſts, yards, and the ſails when they are bent.
GRE'ER, to rig a ſhip, or fit her with rigging, blocks, yards, ſails, &c.
GRELIN, a hauſer, or ſtream cable.
GRENADE *à main*, a grenade; alſo a powder-flaſk.
GRENIER, the floor-cieling of a ſhip, or a ceiling which reaches only from the kelſon to the floor heads.
Charger en GRENIER. See CHARGER, *&c.*
GREVE, a flat, low, and ſandy ſhore.
GRIBANE, a ſmall veſſel navigated on the coaſt of Normandy, and carrying a main-maſt and fore-maſt, without any tops.
GRIGNON, ſea bread called ruſks, common in Holland and Denmark.
GRIP, a ſmall veſſel reſembling a ſchooner or ſhallop.
GROS *d'un vaiſſeau*, the breadth, or extreme breadth of a ſhip.
GROS *temps*, a hard gale of wind; blowing weather; foul or ſqually weather.
GROSSE *avanture*, bottomry.
GRUE, a crane with a wheel, uſed on wharfs and keys.
GUERLANDES. See GUIRLANDE.
GUET *de la mer*. See GARDES *des côtes*.
GUI, the main-boom of a ſloop; alſo the fore-boom of a ſchooner.
GUINDAGE, the act of hoiſting with tackles in general, but more particularly when they are applied to the lading or unlading of a ſhip; it alſo implies the money paid to thoſe who are employed in ſuch exerciſes.
GUINDAGES likewiſe imply the tackles, and other machines uſed in lading, &c.
GUINDANT *d'un pavillon*, the hoiſt or heighth of an enſign or flag.
GUINDAS, the windlaſs. See VIRE-VAUT.
GUINDER, to ſway up a top-maſt.
GUINDERESSE, a top-rope, uſed to ſway up, or lower the top-maſt.

GUIRLANDES, the breaſt-hooks in a ſhip's bow.
GUISPON, a bruſh uſed to pay the ſhip's bottom with ſoap, tar, &c.
GUITERNE, a prop or ſhore, uſed to ſupport the ſheers which are employed to maſt a ſhip, or take out her maſts.
GUITRAN, a ſort of bitumen, or pitch, uſed to pay a ſhip's bottom.
GUMES, or GUMERES, a general name given in Provence to all large ropes; as hawſers, cables, &c.

H.

HABIT *de bord*, ſea-clothes, as jackets, trowſers, &c.
HABITACLE, the binacle.
HACHE *coignee*, an ax or hatchet, uſed by ſhip-wrights, &c.
HACHE *d'armes*, a pole-ax or battle-ax.
HACHER, to hew or chop with an ax.
HALAGE, the tracking or towing a ſhip from one place to another.
HALE *à bord*, the boat-rope, or gueſs-rope of a boat's moorings.
HALE-*bas*, a down-haul, or down-haul tackle.
HALE-*bouline*, a freſh-water ſailor.
HALER, to haul or pull upon any rope.
HALER *le vent*, to haul the wind, or come nearer to its direction.
HALER *à la cordelle*, to warp a ſhip from one place to another.
HALEUR, a perſon who tracks a boat by a rope reaching aſhore and faſtened round his waiſt.
HAMAC, a hammoc.
HANCHE, the quarter of a ſhip.
HANGARD, a ſhed or ſtore-houſe in a dock-yard, wherein the maſts and pieces of timber are covered from the weather, and ranged in order.
HANSIERE. See AUSSIERE.
HARPIN, a boat-hook. See CROC.
HARPON, a harpoon, uſed in ſtriking of whales, &c. whence,
HARPONNEUR, an harponneer, employed in the ſervice above mentioned.
HARPONS, are alſo ſharp cutting-hooks, laſhed to the yard-arms to deſtroy the enemies rigging, in the act of boarding.
HAUBAN *de voile d'etui*, the guy of a lower ſtudding-ſail boom, or of the main-boom of a brig, ſloop, or ſchooner.
HAUBANER, to faſten the ſtay of a gin, triangle, or ſuch ſort of machine, to a ſtake or peg.
HAUBANS, the ſhrouds of the maſts.
HAUBANS *de beaupre*, the ſtanding lifts of the ſprit-ſail yard.
HAUBANS *de chaloupe*, the gripes or laſhings of the boats, by which they are faſtened to the decks at ſea.
HAVRE, an haven, or harbour.
HAVRE-*brute*, an harbour formed by nature.
HAVRE *de toutes marées*, a port acceſſible at any time of the tide.
HAUSSER *un vaiſſeau*, to raiſe a diſtant ſhip by approaching her gradually in chace.
HAUSSIERE. See AUSSIERE.
HAUT *& bas*, the order to the men at the pump to take long ſtrokes, which will not ſo readily fatigue them as the ſhort ones, which are quicker.
HAUT-*pendu*, a ſmall cloud charged with a heavy ſquall.
HAUTE-*mer*, the offing.
HAUTE-*maree*, *le vif de l'eau*, *pleine-marée*, high-water, a ſpring-tide, a ſpring-flood.
HAUTE-*ſomme*, contingent-money, expended on account of any extraordinary charges.
HAUTES-*voiles*, the topſails, and top-gallant-ſails.
HAUTEUR, *ou* LATITUDE, the diſtance of any place in degrees, from the equinoctial. See LATITUDE.
HAUTEUR *de l'étambet*, the heighth of the ſtern-poſt.
HAUTEUR *de l'étrave*, the heighth of the ſtem.
HAUTEUR *entre deux ponts*, the heighth between-decks.

HAUTS *d'un vaiſſeau*, the heighths or eminences of a ſhip.

Mettre les mâts de hune HAUTS, to ſway up the topmaſts; to get the topmaſts an end.

HAUTURIER, or *pilote*-HAUTURIER, a pilot who directs the ſhip's courſe by celeſtial obſervations.

HAYE, HAIE, a ridge of rocks, a chain of rocks under water, or near the ſurface of the water.

HEAUME, the tiller, or bar of the helm in ſmall veſſels.

HELER *un vaiſſeau*, to hail or accoſt a ſhip at a diſtance.

HERPE *de plat-bord*, the drift-rails on the bow quarter of a ſhip.

HERPES *de poulaine*, the rails of the head. See *Liſſes de* POULAINE.

HERPES *marines*, a general name for whatever is thrown upon the ſea-coaſts of value, as coral, amber, &c.

HERSE *de poulie*. See ESTROPE.

HERSES *d'affût*. See ERSES.

HERSILIERES, certain knees placed horizontally on the quarters or bows of a ſhip, cloſe to the gunnel.

HEU, a large hoy, a ſailing lighter.

HEUSE, the ſpear of a pump, together with it's box.

HILOIRIES. See ILLOIRES.

HISSE, HISSE, hoiſt away! hoiſt heartily!

HISSER, ISSER, to hoiſt or pull up any thing by a tackle.

HISSER *en douceur*, to hoiſt handſomely, or gradually.

HIVERNER, to winter, to lie up in a port during the winter ſeaſon.

HOIRIN. See ORIN.

HOLA, hoa the ſhip a hoy! an acclamation to hail or accoſt a ſhip at a diſtance.

HOLA-HO, a cry which anſwers to yoe-hoe.

HOMME, a name frequently given as a token of diſtinction to an able or expert ſeaman.

HONNEUR, *faire honneur à une ecueil*, &c. to give a good birth to, or keep aloof from any rock, or ſhoal, or other object which might intercept a ſhip's courſe.

HOPITAL, an hoſpital-ſhip, that attends on a fleet to receive the ſick.

HORLOGE, an half-hour glaſs for regulating the watch.

HOUACHE, or SILLAGE, the wake or track of a ſhip in the ſea, made by her paſſage through it.

HOUCRE. See HOURQUE.

HOULES, or *lames de mer*, the waves of a ſwelling or breaking ſea.

HOULEUX, a rolling and turbulent ſea.

HOUPE'E, the riſe or ſwell of a wave; whence

Prendre la HOUPE'E, to watch the ſwell, as in mounting from a boat into a ſhip, when the boat riſes.

HOURAGAN. See OURAGAN.

HOURSE, or OURCE, the vangs of a mizen-gaff or yard.

HOURDI. See *Liſſe de* HOURDI.

HOURQUE, a Dutch howker; a particular ſort of hoy.

HOUVARI, a ſtrong land-wind in the Weſt-Indies, accompanied with rain, thunder, and lightning.

HUNE, the top.

HUNES *de perroquet*, the topmaſt croſs-trees.

HUNIER, a topſail.

Le grand HUNIER, the main-topſail.

Le petit HUNIER, the fore-topſail.

Avoir les HUNIERS *à mi-mat*, to have the topſails half-maſt up.

Avoir les HUNIERS *dehors*, to have the topſails ſet.

Mettre le vent ſur les HUNIERS, to brace the topſails to the wind, or to lay them aback on the maſt.

Amener les HUNIERS *ſur le ton*, to lower the topſails down upon the cap.

HUTTER, to lower the lower yards down a port-laſt, and peek them up ſo as to hold leſs wind, as when a ſhip rides at anchor in a ſtorm.

HYDROGRAPHE, an hydrographer, employed by the ſtate to teach navigation in the ſea-ports.

J.

JAC, or JACHT. See YACHT.

JACQ, the jack of the bowſprit. See PAVILLON.

JALOUX, a name given in Provence to the quality of rolling violently at ſea; or of being crank.

JAMBES *de hune*. See GAMBES *de hune*.

JARDEN, a name ſometimes given to the gallery or balcony of a ſhip.

JARLOT, the rabbet, or channel, cut in the ſtem afore, and in the ſtern-poſt abaft, &c. and into the keel, to receive the ends or edges of the planks enveloping the ſides and bottom of a ſhip.

JAS, or JOUAILS *d'ancre*, the anchor-ſtock; or the two pieces of which it is compoſed.

JATTE, the manger of a ſhip. See GATTE.

JAVEAU, a bank, or ſmall iſland, formed in a river by a maſs of gravel or mud.

JAUGE, the tonnage or burthen of a veſſel.

JAUGER, to meaſure, or take the dimenſions of a ſhip, in order to diſcover her burthen.

JAUMIE'RE, the hole in a ſhip's counter or ſtern, which contains the rudder-head, and in which it is turned by the tiller; the lower part of it is uſually covered with a piece of tarred canvas nailed to the rudder, to prevent the entrance of the water.

JET *de voiles*, a complete ſuit of ſails for all the maſts, yards, ſtays, &c.

JET alſo implies any part of the cargo, &c. thrown over-board in a ſtorm.

Faire le JET, to throw overboard the cargo, or any part of it, in a dangerous ſtorm, in order to lighten the veſſel, ſo as to prevent ſhipwreck or foundering; on which occaſion the maſter uſually draws up a proteſt againſt the weather, &c. on his arrival in port.

JETTE'E, a pier, or mole-head, formed by a heap of ſtones ſunk at, or near, the entrance of a harbour. Alſo a great wharf or key.

JETTER *à la mer*, to throw any thing over-board.

JETTER *dehors le fond du hunier*, to ſoot the topſail out of the top.

JETTER *du bled, ou autres grains à la bande*, to trim the corn, ſalt, or ſuch like materials, to the other ſide of the ſhip, on any particular occaſion.

JETTER *l'ancre*, to let go the anchor; to drop anchor.

JETTER *la ſonde, ou le plomb*, to ſound, or heave the lead.

JETTER *un navire ſur un banc, ou ſur un rocher, ou à la côte*, to run a ſhip aſhore, upon a bank, rock, or coaſt, to avoid an enemy.

JEU *du gouvernail*, the play of the helm or rudder.

ILLOIRES, two ranges of planks running fore and aft in a French ſhip, throughout the whole length of the deck on each ſide of the hatches, in the ſame place where the carlings are fixed in an Engliſh ſhip of war.

INCOMMODE', diſabled by the loſs of maſts, ſails, or rigging. See DE'SEMPARE'.

INGE'NIEUR *de la marine*, an officer who conſtructs the fortifications of a ſea-port, either for attack or defence: alſo a perſon employed to ſurvey coaſts, draw ſea-charts, and teach the theory of navigation.

INONDER, to overflow a country, as by an inundation of the ſea.

INSPECTEUR *des conſtructions*, an officer whoſe duty is nearly ſimilar to that of our ſurveyors of the navy.

INTENDANT *de marine*, an officer who, by his duty and authority, reſembles our reſident commiſſioner of a dock-yard. See COMMISSAIRE *général de la marine*, where his office is particularly deſcribed.

INTENDANT *des armées navales*, an officer appointed to regulate the juſtice, police, and finances of a naval armament.

INTENDANT *général de la marine*, a commiſſioner-general of all the royal dock-yards and ports of the kingdom.
INTERLOPRES, ſmugglers, or contraband traders.
INTE'RRESSE'S. See CHARGEURS.
INVESTIR, to touch, or ſtop at any port in a voyage; alſo to be driven into a road or harbour.
JOL, a Daniſh yawl.
JONCTION *de deux flotes, ou de deux armées navales*, the conjunction of two fleets of ſhips of war, or merchantmen.
JONQUE, a Chineſe junk.
JOTTES, the fore-part of a ſhip's bow, contained between the cat-head and the ſtem.
JOTTEREAUX, the cheeks of the head.
JOTTEREAUX *de mât*, the cheeks of the maſt.
JOUER *le gouvernail*, to play the helm, or traverſe it from ſide to ſide, as in light winds.
JOUER, to fetch way; as,
Le mât JOUE, the maſt fetches way.
JOUES *de virevaut*, the cheeks of the windlaſs.
JOUETS, certain clamps, or plates of iron, uſed to prevent the bolt-heads from cutting the timber into which they are driven; as,
JOUETS *de pompe*, the iron clamps nailed on the cheeks or ears of the pump, thro' which the bolts are introduced.
JOUETS *de ſep de driſſe*, plates of iron nailed on the knight-heads of the jears, to preſerve them from the iron pins of the jear-block.
JOUR, a light-port; alſo the interval left between any two pieces of timber, to prevent them from chafing each other.
JOURS. See SEJOURS.
ISLES *d'avau le vent*, the Leeward Iſlands of the Weſt Indies.
ISLES *du vent*, the Windward Iſlands of the Weſt Indies.
ISSAS. See DRISSE.
ISSER. See HISSER.
ISSONS, thick white ropes, occaſionally employed as jears to the lower yards.
ISSOP, or ISOP, hoiſt away! ſway away!
ITAQUE is in general the tye of any yard, but more particularly a topſail tye.
ITAQUE *de palan*, the runner of a tackle.
JUMELLER *un mât*, to fiſh a maſt, or faſten fiſhes upon it.
JUMELLES, the fiſhes of the lower maſt.
JUSSANT, the ebb-tide.

L.

LABOURER, to raiſe, or harrow the ſurface of the ground with the ſhip's keel, in paſſing over a ſhallow.
L'ancre LABOURE, the anchor comes home, ſhifts, or looſens from it's hold.
LAC, a great lake of freſh water.
LAGAN. See CHOSES *de la mer*.
LAGON, a ſort of bay.
LAGUE *d'un vaiſſeau*, the path, track, or wake of a ſhip. See SILLAGE.
LAISSES *& relais*, a ſort of bank thrown up by the waves of the ſea, upon any coaſt.
LAMANAGE, coaſting pilotage, or the act of piloting a veſſel into, or out of any harbour or river.
LAMANEUR, a harbour or river pilot.
LAMES *de la mer*, the waves or billows of the ſea.
La LAME *vient de l'avant*, the ſea comes a-head.
La LAME *vient de l'arriere*, the ſea comes aſtern, the ſea follows the ſhip.
La LAME *prend par le travers*, the ſea ſtrikes the ſhip upon the broadſide; expreſſed of a ſhip when ſhe lies in the trough of the ſea.
Courir au devant de la LAME, to ſcud before the ſea.
LAMPES *d'habitacle*, the lamps of the binnacle.
LAMPION, a ſmall lamp, uſed to enter the ſhip's magazine.
LANCER, to ſheer or yaw to the right or left of the ſhip's courſe.
LANCER *un vaiſſeau à l'eau*, to launch a ſhip from the ſtocks into the water.

LANCER *une manœuvre*, to belay a rope to a cleat, or timber-head.

LANGUE *de voile*, the goring of a ſail, or that part which is next to the leech.

LANTERNE *à gargouſſes*, a cartridge-caſe, to carry the cartridges from the ſhip's magazine to the artillery, in the time of battle.

LANTERNE *à mitrailles*, a caſe, box, or canniſter, filled with caſe-ſhot, or langrage, wherewith to charge a cannon.

LANTIONE, a ſort of row-galley, navigated on the coaſt of China.

LARDER *la bonette*. See BONETTE *lardée*.

Au LARGE! ſheer off! the order given by the centinel on a ſhip's gangway to any adjacent boat, to keep aloof.

Courir au LARGE, *ſe mettre au* LARGE, to ſtand off to ſea; to bear out from the coaſt towards the offing.

LARGEUR, the meaſure of a ſhip from ſide to ſide, in any place.

LARGUE, the offing; ſea-room; out at ſea.

Vent LARGUE, a large, or quartering wind.

LARGUER, to relax, or looſen; expreſſed of a ſhip that ſtrains violently in a high ſea, ſo as to open in ſeveral places.

LARGUER *une amarre*, to caſt off, or let go a belayed rope.

LASSER, or LACER *une voile*, to reef a courſe with a reef-line.

Voile LATINE, a lateen ſail.

LATITUDE, latitude.

LATTES *à baux*, the ledges placed in the intervals between the deck-beams.

LATTES *de caillebotis*, the battens or laths of the gratings.

LATTES *de galere*, a ſort of broad thin beams, uſed to ſupport the decks of a gallery.

LAZARET, a lazaretto, or building to receive perſons while performing quarantine, &c.

LE', the fair way of a channel, harbour, or river.

LEBESCHE, the ſouth-weſt wind, in the dialect of Provence.

LEGE, light; without a cargo of any kind: underſtood alſo of a ſhip which is not ſufficiently ballaſted.

LEST, a general name for any ſort of ballaſt.

LEST *bon*, or *bon* LEST, good ballaſt; or ſuch as lies firmly in the hold, without incommoding the pumps; as ſhingle, gravel, &c.

LEST *de plongeurs*, a weight uſed by the divers in the coral-fiſhery. It is faſtened ſecurely to their waiſts, to balance them in the water, and keep them ſteady, that they may traverſe the waves eaſily, without being toſſed about.

LEST *gros*, or *gros* LEST, heavy ballaſt, compoſed of large ſtones, or pigs of iron.

LEST *lavé*, waſhed ſhingle ballaſt.

LEST *mauvais*, bad ballaſt, as ſand, ſalt, &c. which is apt to melt or penetrate through the ceiling, and choak the timbers and pumps.

Le LEST *roule*, the ballaſt ſhifts.

Voiles à LEST, port-ſails, or pieces of canvas, depending from the port-hole of the ſhip, into which the ballaſt is thrown, to the ſide of the ballaſt-lighter, in order to prevent the ballaſt from falling into the water.

LESTAGE, the ballaſting of a ſhip, or furniſhing her with ballaſt.

LESTER, to ballaſt a veſſel, or furniſh her with ballaſt.

LESTEUR, a ballaſt-lighter.

LETTRES *de repriſailles*, letters of mart.

LETTRE *de mer*, a paſſport.

LEVE'E, a ſwelling ſea.

Il y a de la LEVE'E, the ſea riſes; there is a broken or boiling ſea.

LEVE-*rame!* unſhip the oars! the order to the rowers to lay in their oars.

LEVER *l'amure*, to tack, or ſhift the tack; to put about.

LEVER *l'ancre*, to weigh the anchor.

LEVER *l'ancre avec la chaloupe*, to weigh the anchor by the buoy-rope in the long-boat. See ANCRE.

LEVER *la fourrure du cable*, to take the plat, or other ſervice, off from the cable.

LEVER *le lof de grand voile*, to haul up the weather clew-garnet of the main-ſail.

LEVER *les terres*, to ſurvey the coaſts, in order to draw a chart thereof.

LEVER *un objet avec la bouſſole*, to ſet a diſtant object by the compaſs, in order to diſcover the bearing thereof.

LEVIER, a lever formed of a handſpec or crow.

LEVIER *à crec*, a clawed-handſpec.

LIAISON, the connexion or faſtening together

together the feveral members or pieces of timber of which a ſhip is compoſed.

LIBOURET, a line or ſnare for fiſhing of mackarel.

LIEU, a league, or meaſure of three miles, common in navigation.

LIEURES, the lower futtocks of a boat. See GENOUX.

LIEUTENANT-*amiral*. See VICE-AMIRAL.

LIEUTENANT-*général des armées navales*, a rear-admiral in the French navy.

LIEUTENANT *de vaiſſeau*, the lieutenant of a ſhip of war.

LIGNE, a line of battle.

Marcher en LIGNE, to ſail in a line.

LIGNE *d'eau*, a water-line.

LIGNE *d'eau de vaiſſeau chargé*, the load water-line.

Un coup de canon, à la LIGNE *de l'eau*, or *à fleur d'eau*, a ſhot between wind and water.

LIGNE *de ſond*, a ſounding-line, or lead-line.

LIGNE *de fort*, the extreme breadth of a ſhip.

LIGNES, ſmall cords or lines, uſed on ſeveral occaſions at ſea.

LIGNES *d'amarrage*, ſeiſings, or laſhings: alſo the cable-bends.

LINGUET, the paul of a capſtern.

LIOUBE, the ſcarf by which a jury-maſt is attached to the ſtump of a maſt that has been carried away.

LISSE, or CARREAU, a general name for the ſheer-rails and drift-rails.

LISSE *de hourdi*, the wing-tranſom.

LISSE *du plat bord*, the waiſt-rail.

LISSE *de pont*. See BARRE *du pont*.

LISSE *le porte aubans*, the ſheer-rails.

LISSES *de la rablature*, the drift-rails.

LIT, the bed or channel in which a river runs.

LIT *de marée*, a tide-way; a part in the ſeas where a current flows, or where there is a flux and reflux of the tide.

LIT *du vent*, the ſource or direction of the wind.

LIURE, the gammoning of the bowſprit.

LIVRE *à livre*, a phraſe which implies a participation of gain or loſs of every owner of a ſhip's cargo, in proportion to his ſhare.

LOCH, or LOK, a log and line.

LOF, the weather-ſide of a ſhip, or that which is to windward of the maſts.

Aller à LOF, to ſail cloſe to the wind.

Bouter le LOF, to trim all ſharp; to ſpring the luff.

Envoie LOF *tout*, to luff round, or luff a lee, in order to throw the ſhip's head up in the wind; to tack her.

Etre au LOF, to be upon a wind, or cloſe-hauled.

Tenir le LOF, to keep the wind, or weather-gage.

LOF *au lof!* luff, boy, luff! the order to ſteer the ſhip cloſe to the wind.

LOF *tout!* put the helm a-lee.

LOF *pour lof!* hard a weather! the order to the helmſman to veer or wear, and bring the wind on the other ſide of the ſhip.

LOF is alſo the weather-clue of a ſail; hence,

Leve le LOF *de la grand voile*, or *leve le grand* LOF! haul up the weather-clue of the mainſail!

LOGE, the birth or cabin of an inferior officer.

LOIER, the wages or pay of a ſeaman.

LONG *au long*, preſſed down ſidewiſe by a ſtiff gale.

LONGIS, the treſtle-trees of the tops, &c.

LONGUEUR *de la quille*, the length of the keel upon a right line.

LONGUEUR *de l'etrave à l'étambord*, the length of a ſhip at the heighth of the ſtem, or the diſtance between the top of the ſtem and the top of the ſtern-poſt.

LONGUEUR *du cable*, a meaſure of 120 fathoms, uſually called a cable's length at ſea.

LOQUETS *d'écoutilles*, the hoops or claſps of the ſcuttles.

LOVER, or ROUER, to coil away a cable. See ROUER.

LOUVOYER, to ply to windward.

LOUVOYER *ſur onze pointes*, to lie up within eleven points of the other tack, or to ſail five points and a half from the wind.

LOXODROMIE, an oblique courſe in navigation, or a courſe which croſſes the meridians at equal and oblique angles.

LOXODROMIQUES, tables of difference of latitude and departure.

LUMIERE *de canon*, the touch-hole of a cannon.

LUMIERE *de pompe*, the hole in the ſide of a pump, through which the water is diſcharged upon the deck, or into the pump-dale.

LUNETTE *d'approche ou de long vûe*, a teleſcope or perſpective-glaſs.

LUZIN, a ſmall line called houſing, or houſe-line.

M.

MACHEMOURE, bread-duſt, formed of ruſk, or broken biſcuit.

MACHINE *à mâter*, the ſheers of a ſheer-hulk, or other machine for maſting a ſhip.

MACLES, nettings of the quarters or ſides of a ſhip.

MAESTRALISER, a name given in the Mediterranean to the weſt variation of the magnetical needle.

MAGASIN *général*, a ſtorehouſe, or magazine, to contain naval ſtores in a dock-yard.

MAGASIN *particulier*, a ſtorehouſe which contains the rigging and cordage uſed for the king's ſhips, magazines, &c.

MAGASINS, the ſtore-ſhips which attend on a fleet of men of war.

MAHONNE, a ſort of Turkiſh galeaſſe.

MAILLE, the keys or buttons by which a bonnet is faſtened to it's ſail.

MAILLES, the intervals, or ſpaces, left between a ſhip's timbers.

MAILLET *de calfas*, a caulking mallet.

MAILLETAGE, the ſheathing of a ſhip's bottom with ſcupper-nails.

MAIN *avant*, the order to pull on a rope hand-over-hand.

MAJOR, an officer who has the charge of mounting, regulating, and relieving the marine-guard in a ſhip, &c.

MAITRE, a term of diſtinction, applied by ſhipwrights to ſeveral pieces of timber which lie in the broadeſt part of a ſhip; as

MAÎTRE-*banc*, midſhip-beam, the beam upon which the extreme breadth of a ſhip is formed. It is ſituated in the midſhip-frame, nearly in the middle of her length, ſerving as a ſtandard, from whence the dimenſions and proportions of the maſts and yards are to be taken. See alſo below, MAÎTRE-*couple*.

MAÎTRE-*canonnier*, the maſter-gunner of a ſhip.

Second MAÎTRE *canonnier*, the gunner's mate.

MAÎTRE *de chaloupe*, the coxſwain, or patroon of the long-boat.

MAÎTRE *couple*, the name of that timber, or combination of pieces formed into one, which determines the extreme breadth of a ſhip, as well as the figure and dimenſions of all the inferior timbers.

MAÎTRE *de l'equipage*, or MAÎTRE *entretenu dans le port*, an officer whoſe duty reſembles that of our maſter-attendant in a dock-yard; inaſmuch as he has charge of whatever relates to the equipping, mooring, or ſecuring of ſhips; as well with regard to rigging, arming, and fitting them for ſea, as to the careening and floating them out of the docks.

MAÎTRE *de grave*, a perſon appointed to take care of the ſalt cod, whilſt drying upon the flakes at Newfoundland.

MAÎTRE *de hache*. See CHARPENTIER.

MAÎTRE-*mâteur*, the maſter maſt-maker.

MAÎTRE *des ponts & des pertuis*, a maſter wherry-man, or waterman, whoſe office it is to conduct the ſmall craft of a harbour through bridges, or other dangerous places.

MAÎTRE *de ports*, an harbour-maſter, or officer appointed to take care of a port, and it's booms, and places of anchorage; to arrange the ſhipping conveniently therein, and regulate their moorings with regard to each other: He has alſo the command of the ordinary-men employed about the rigging, careening, &c.

MAÎTRE *de ports* is likewiſe an officer reſembling our tide-ſurveyors of the cuſtoms in an out-port.

MAÎTRE *de quai*, a principal wharf-maſter, or officer appointed to regulate the affairs of wharfs and keys, and the ſhipping moored along-ſide thereof: to ſee that the fires are extinguiſhed at night, and that no fires be made in any ſhip or boat during the night: He is beſides to appoint the proper places for ballaſting and unballaſting veſſels; as alſo for careening, caulking, and repairing them, and tarring their rigging: Finally, he is to place the light-houſes, beacons, and buoys, where neceſſary; to examine once a month, and after every ſtorm, the uſual channels of paſſage for ſhipping; and to ſee whether the ground has not ſhifted, ſo as to alter the uſual ſtations of anchorage.

MAÎTRE *de vaiſſeau*, or CAPITAINE, the maſter or commander of a merchant-ſhip.

MAÎTRE *de vaiſſeau de guerre*, the maſter of a ſhip of war.

MAÎTRE-*valet*, the ſhip's ſteward.

Contre-MAÎTRE, boatſwain, the officer of a ſhip, who has the charge of the colours, boats, ſails, rigging, cables, anchors, &c.

MAL *de mer*, ſea-ſickneſs.

MALEBESTE, *malebête*, or *petaraſſe*. See PETARASSE.

MALINE, a ſpring-tide.

MAL-*fain*, foul ground; bad anchor-ground.

MANCHE, a great channel; as, *la* MANCHE *Britannique*, the Engliſh channel; *la* MANCHE *de Briſtol*, the channel of Briſtol, &c.

MANCHE *à l'eau*, *ou* MANCHE *pour l'eau*, a canvas or leathern hoſe, to convey water from the deck into the caſks which are ſtowed in the hold.

MANCHE *de pompe*, the pump-hoſe.

MANCHE *de rame*, handle of an oar.

MANEAGE, a name given to thoſe employments, or labours, for which the crew of a ſhip can demand no additional pay of the merchant. Such is the lading a ſhip with planks, timber, or green or dried fiſh.

MANEGE *du navire*, the general trim of a ſhip, with regard to the ſituation of the maſts and the center of gravity; as alſo to the diſpoſition of the ſails, and the efforts of the wind and ſea.

La lune a MANGE', *la lune* MANGERA, the moon has eat them up, or will eat them up; underſtood of the clouds: a cant phraſe, uſual amongſt common ſailors, to expreſs the diſſipation of the clouds on the riſing of the moon.

Etre MANGE' *par la mer*, to be in the hollow or trough of a high ſea, which often breaks aboard.

MANGER *du ſable*, to flog the glaſs, or cheat the glaſs; expreſſed of the ſteerſman, who turns the watch-glaſſes before they have run out, in order to ſhorten the period of his watch.

Tems MANIABLE, moderate weather, and wind favourable for ſea.

MANNE, a ſort of hand-baſket, uſed on ſeveral occaſions in a ſhip.

MANŒUVRE, the working of a ſhip, or the direction of her movements, by the power of the helm, and the diſpoſition of the ſails to the wind.

MANOEUVRE *baſſe*, the work or employment which may be performed upon deck, by the effort of the ropes upon the ſails and yards.

MANOEUVRE *fine*, a dextrous management of the ſhip in working her.

MANOEUVRE *groſſe*, heavy and laborious work in a ſhip; as the embarkation of the artillery and cables, the ſtowage of the anchors, &c.

MANOEUVRE *hardie*, a difficult or dangerous operation at ſea or on ſhip-board.

MANOEUVRE *haute*, the employment of the ſailors in the tops, at the maſt-heads, and upon the yards.

MANOEUVRE *tortuë*, a lubberly, or aukward manner of working a ſhip.

MANOEUVRER, to work a ſhip, or direct the movements of a fleet.

MANOEUVRES, a general name given to the rigging, ſails, blocks, and cordage of a ſhip; but more particularly to the ſtanding and running ropes.

MANOEUVRES *à queüe de rat*, ropes which taper to the end; as the main and fore tacks.

MANOEUVRES *en bande*, ſlack ropes which are unemployed.

MANOEUVRES-*majors*, a name uſually given to the largeſt ropes in a ſhip; as the ground-tackling, and the principal ſtays.

MANOEUVRES *paſſées à contre*, ropes leading forward; as thoſe of the mizen-maſt.

MANOEUVRES *paſſées à tour*, ropes leading aft.

MANOEUVRIER, an able or expert ſea-officer; or one who is perfectly ſkilled in working a ſhip by every method of ſailing.

MANQUER, to fly-looſe; underſtood of a rope which is broke, or looſened from the place where it was made faſt, ſo as to be blown out to leeward, &c.

MANTEAUX, two folding-doors in a bulk-head.

MANTELETS, the port-lids, or covers of the ports in a ſhip's ſide.

MANTURES, the rolling waves of the ſea. See HOULES, LAMES, and *Coup de* MER.

MANUELLE, the whip-ſtaff of a helm; an inſtrument which is now entirely diſuſed.

MAQUILLEUR, a decked boat, uſed in the mackarel fiſhery.

MARABOUT, a ſail hoiſted in the galleys in ſtormy weather.

MARAIS *ſalans*, ſalt-pits on the ſea-coaſt;

or

or reſervoirs to contain ſea-water, for the purpoſe of making ſalt.

MARANDER, a phraſe uſed by the common ſailors in the channel, implying to ſteer eaſily.

MARCHE-PIED, the horſe of any yard.

MARCHE-PIED is alſo a ſpace, about three fathoms broad, left on the banks of a river, whereon to draw boats aſhore, &c.

MARCHER. See *Ordre de* MARCHE.

MARCHER *dans les eaux d'un autre vaiſſeau*, to ſail in the wake or track of another ſhip.

MARCHER *en colonne*, to ſail in a line, or column.

MARE'AGE, the hire or pay of a ſailor for any particular voyage.

MARE'E, the tide. See FLUX & *reflux*.

La MARE'E *eſt haut*, it is high water.

MARE'E *qui ſoûtient*, a tide which counteracts the wind, with regard to a ſhip's courſe, enabling her to turn to windward better.

Mortes MARE'ES, neap-tides, or dead-neap.

MARE'ES *qui portent au vent*, a wind-tide, or tide which runs to windward.

MARE'ES *& contre mares*, tide and half-tide.

MARGOUILLET, a bull's eye or wooden traveller,

MARGUERITES, a name given to jiggers, or ſuch ſort of purchaſes, uſed to pull a rope with greater effort.

Faire-MARGUERITE, to clap a meſſenger on the cable, when the anchor cannot be purchaſed by the voyol.

MARIN, a ſea-faring man of any denomination.

MARINE implies in general the knowledge of maritime affairs: alſo the perſons employed in the ſea-ſervice, &c.

Gens de MARINE, ſeamen, fiſhermen, &c.

Officiers de MARINE, ſea-officers.

MARINIER, a name generally given to ſailors; but more particularly to lightermen.

MARITIME, marine, of, or belonging to, the ſea.

Batteaux MARNOIS, a yacht, hoy, or ſmack, employed on the rivers of Marne and Seine.

MARQUES, the ſea-marks obſerved by the pilots upon any coaſt; as mountains, ſpires, windmills, &c.

MARSILIANE, a ſquare-ſterned ſhip, navigated on the gulph of Venice, and along the coaſts of Dalmatia. They are of ſeveral ſizes, the largeſt carrying about 700 tons.

MARSOUINS, a name given to the ſtemſon forward, and to the falſe-poſt abaft.

MARTEAU *à dents*, a claw-hammer uſed by ſhipwrights.

MARTICLES, or *lignes de trélingage*, a crow-foot, or complicated ſpan.

MARTICLES is alſo a name given by ſome to the furling lines of ſmall ſails.

MARTINET, is properly the runner or tye which is faſtened to the dead-eye of a crow foot, formerly uſed as a topping-lift for the mizen-yard.

MARTINET is alſo a general name for the haliards, or tracing-line of a crow-foot.

MASCARET, a violent eddy of the tide.

MASLES, the pintles, by which the rudder is hung upon the ſtern-poſt. See FERRURE *de gouvernail*.

MASSE, a large iron maul, uſed by ſhipwrights to drive the tree-nails and bolts into the ſhip's ſide; alſo a very long tiller uſed in ſome lighters.

MASULIT, a ſort of Indian boat, whoſe ſides are compoſed of the bark of trees, and caulked with moſs.

MÂT, a maſt. The principal maſts of a ſhip are,

Le grand MÂT, the main-maſt.

MÂT *de miſaine*, the fore-maſt.

MÂT *d'artimon*, the mizen-maſt.

MÂT *d'un brin*, a maſt formed of one piece of wood only; ſuch are the bowſprit and top-maſts of all ſhips, and all the maſts of a ſmall veſſel.

MÂT *force*, a maſt which is ſprung.

MÂT *jumelle*, *reclampé*, or *renforcé*, a maſt which is fiſhed in a weak place, or oppoſite to any ſpring.

MÂTS *de rechange*, ſpare top-maſts, or maſts in reſerve.

Aller à MÂTS *& à cordes*, *Mettre à* MÂTS *& à cordes*, *ſe mettre à ſec*, to try, or ſcud under bare poles.

MÂTS *venus à bas*, diſabled maſts.

MÂTS *de hune hauts*, to heave the top-maſts an end, or ſwayed up.

MATAFIONS, knittles, or ſmall robands.

MÂTE' *en caravelle*, fitted with pole top-maſts.

MÂTE' *en chandelier*, maſted upright. Expreſſed of a ſhip whoſe maſts are ſtayed ſo as neither to hang forward or aft.

MÂTE' *en frégate*, the bent or inclination of

of the maſts, when they rake forward, or ſloop towards the head.

MÂTE' *en fourche*, or *à corne*, maſted for a boom and gaff; as a ſloop or ſchooner.

MÂTE' *en galere*, to be maſted as a galley; having only two maſts, without any top-maſt.

MÂTE' *en ſemaque*, maſted for a ſprit which croſſes the ſail diagonally.

MATELOT, a ſailor, or mariner; a man before the maſt.

MATELOTAGE, the hire, wages, or pay of ſeamen.

Il eſt un bon MATELOT, he is an able ſeaman.

Vaiſſeau MATELOT, a good company-keeper, or a ſhip that ſails well, and keeps her ſtation in a fleet; alſo the ſhips, in a fleet of men of war, which are appointed ſeconds to the admirals or commanding officers.

MATELOTS-*gardien*, the ordinary-men attending a royal dock-yard, and it's harbour or dock; including alſo the carpenters and caulkers appointed to watch in the ſhips of war.

MÂTER, to fix or place the maſts of a ſhip.

MÂTEREAU, a ſmall maſt, or end of a maſt.

MÂTEUR, a maſt-maker. See MAÎTRE-*mâteur*.

MÂTURE, the art of maſting ſhips; alſo a general name for the maſts themſelves.

La MÂTURE, the maſt-ſhed, or the place where the maſts are made.

MAY, a ſort of trough bored full of holes, wherein to drain cordage when it is newly tarred.

MAUGERES, or MAUGES, the ſcupper-holes.

MECHE, the match by which a cannon is fired.

MECHE *de cabeſtan*, the middle-piece, or body of the capſtern.

MECHE *de mât*, the main or middle piece of a lower maſt, when the latter is compoſed of ſeveral pieces, as uſual in many ſhips of war.

MECHE *du gouvernail*, the principal piece of a rudder.

MECHE *d'une corde*, the middle ſtrand of a four-ſtranded rope.

MEMBRES *de vaiſſeau*, a name given to any of the pieces of which the ribs are compoſed; as the floor-timbers, top-timbers, and ſuttocks.

MER, the ſea; whence,

Pleine MER, full ſea;

Haute MER, high water. See MARE'E.

MER *ſans fond*, a part of the ſea where there is no anchoring-ground.

La MER *a perdu*, the tide has fallen; it is falling-water.

La MER *briſe*, the ſea breaks, or foams; as by ſtriking a rock or ſhore.

La MER *brûle*, the ſea burns, as in a dark and tempeſtuous night.

La MER *eſt courte*, the ſea runs ſhort, broken or interrupted.

La MER *eſt longue*, the ſea runs long and ſteady; or without breaking.

La MER *étale*, the ſea is ſmooth, as in a calm.

La MER *mugit*, the ſea roars, as being turbulent.

La MER *rapporte*, the ſpring-tides have recommenced.

La MER *roule*, the ſea rolls.

La MER *ſe creuſe*, the ſea riſes and runs croſs.

La MER *va chercher le vent*, the wind riſes againſt the ſea.

Il y a de la MER, the ſea runs high. When the violence of the waves are abated, they ſay, in a contrary ſenſe, *Il n'y a plus de* MER.

Jetter à la MER, to throw overboard.

Mettre à la MER, or *faire voiles*, to put to ſea, or ſet ſail.

Tenir la MER, to keep the ſea, or hold out in the offing.

Tirer à la MER, to ſtretch out to ſea. See BOUTER *au large*.

Recevoir un coup de MER, to ſhip a ſea.

MERLIN, marline, or merline.

MERLINER *une voile*, to marle a ſail to it's foot-rope.

Arbre de MESTRE, the main-maſt of a row galley.

METTRE *à bord*, to bring, or carry aboard.

METTRE *à la voile*, to get under ſail, to ſet ſail.

METTRE *une navire en rade*, to carry a ſhip into any road.

METTRE *à terre*, to carry, or put aſhore; to diſembark.

METTRE *la grande voile à l'echelle*, to get the main-tack down with the paſſaree.

METTRE *les baſſes voiles ſur les cargues*, to haul up the courſes in the brails.

METTRE *les voiles dedans*, METTRE *à ſec*, *ou* METTRE *à mâts & à cordes*, to take in, furl, or hand all the ſails.

METTRE *le linguet*, to paul the capſtern, or put in the paul.

METTRE *un matelot à terre*, to ſet one of the crew aſhore; to turn adrift or maroon a ſailor.

METTRE *une ancre en place*, to ſtow an anchor on the bow.

MEURTRIERES, *ou* JALOUSIES, the loop-holes in a ſhip's ſides or bulk-heads, through which the muſquetry is fired on the enemy.

MI *mât*. See HUNIER.

MINOT, the davit of a ſhip: alſo a fire-boom. See DEFENSE.

Coins de MIRE, the coins, or aiming wedges of a cannon.

Prendre ſa MIRE, to take aim with a cannon; to level or point a cannon, or other fire-arm, to it's object.

MIRER, to loom, or appear indiſtinctly, as the land under a cloud on the ſea-coaſt.

MIROIR. See ECUSSON.

MISAINE, the fore-maſt.

MISAINE, or *voile de* MISAINE, the fore-ſail.

Traverſer MISAINE, flat-in forward, or haul in the fore-ſheet, jib-ſheet, and fore-ſtay-ſail ſheet, towards the middle of the ſhip.

MITRAILLES, a general name for langrage ſhot.

MODELE. See GABARI.

MOIS *de gages*, the monthly pay, or wages of a ſailor.

MOLE *de port*, a pier, or mole-head.

MOLER *en pouppe*, *en poger*, to bear away and bring the wind aft, in the dialect of Provence and Italy.

MOLIR *une corde*, to ſlacken, douſſe, or caſe off a tight rope.

MONSON, or MOUSON, a monſoon, or trade-wind of India.

MONTANS *de poulaine*, the timbers of the head, or vertical rails, which are uſually ornamented with ſculpture.

MONTANS *de voute*, the ſtern-timbers.

Le MONTANT *de l'eau*, or *le flot*, flowing water; the flood-tide.

MONTE', mounted, or equipped with a certain number of guns, or men; as,

Vaiſſeau MONTE' *de* 50 *ou* 60 *canons*, a ſhip mounting 50 or 60 guns.

Vaiſſeau MONTE' *de trois cents hommes*, a ſhip manned with three hundred hands, or whoſe complement conſiſts of three hundred.

MONTER *le gouvernail*, to hang the rudder.

MONTER *au vent*, to ſpring the luff, or haul the wind,

MONTURE, the arming a ſhip for war, or mounting her with cannon, and other fire-arms, and manning her.

MOQUE, a heart, or dead-eye of a ſtay.

MOQUE *de civadiere*, a ſprit-ſail ſheet-block.

MOQUE *de trelingage*, the dead-eye of a crow-foot.

MORDRE, to bite, or hold faſt; underſtood of the claw or fluke of an anchor which is ſunk in the ground.

MORNE, a name given in America to a cape or promontory.

MORTAISE, a hole or mortiſe, cut to receive the end of a piece of timber, called the tenent or tenon.

MORTAISE *du gouvernail*, the hole in the rudder-head which contains the tiller.

MORTAISE *de poulie*, the channel, or vacant ſpace in a block which contains the ſheave.

MORTAISE *du mât de hune*, the ſid-hole of a top-maſt.

MORTE-*d'eau*, or MORTE-*eau*, nip-tide, or neap-tides; alſo dead low water.

MORTIER, a mortar, employed to throw ſhells or carcaſes from a ketch.

MOUFFLE *de poulie*, the ſhell of a block. See ARCASSE.

MOUILLAGE, anchoring-ground.

Mauvais MOUILLAGE, foul-ground; bad anchor-ground, or foul-bottom.

MOUILLE, let go the anchor! the order to let the anchor fall from the cat-head to the bottom.

MOUILLE' *à une ancre de flot*, *& une ancre de juſſant*, moored with one anchor towards the flood, and another towards the ebb.

MOUILLE' *entre vent & marée*, moored between wind and tide.

Bien-MOUILLE', well-moored; or moored in a good birth and anchor-ground.

MOUILLER, or MOUILLER *l'ancre*, to let go the anchor; to come to an anchor, or, ſimply, to anchor.

MOUILLER *à la voile*, to let go the anchor whilſt the ſails are yet abroad.

MOUILLER *en croupiere*, to moor with a ſpring upon the cable, in order to cannonade a fort, &c.

MOUILLER *en patte d'oie*, to moor with three anchors a-head, equally diſtant from

from each other, and appearing like the foot of a goose.

MOUILLER *l'ancre de toüei*, to moor with the boat; or to carry out an anchor.

MOUILLER *les voiles*, to wet the sails; a practice usual in light winds.

MOUILLER *par la quille*, a sarcastical expression implying that a ship is fast a-ground. In the same sense our seamen say, every nail in her bottom is an anchor.

MOULINET, a small windlass, as that of a launch or long-boat.

MOULINET *à bittord*, a spun-yarn winch.

MOURGON. See PLONGEUR.

MOUSSE, *garçon de bord*, a ship-boy; one of the prentices, or officers servants.

MOUTONNER, to foam; expressed of the waves in a tempest or turbulent sea.

MOYEN-*parallel*, the middle latitude in navigation, or the parallel that holds the middle place between the latitude departed from, and the latitude arrived in.

MULET, a sort of Portuguese vessel with three masts, and lateen-sails.

MUNITIONAIRE, an agent-victualler, or a contractor for sea-provisions.

Commis du MUNITIONAIRE. See COMMIS.

N.

NACELLE, a skiff, or wherry, without masts or sails, and usually employed to pass a river.

NAGE, the row-lock of a boat. See also AUTARELLE.

NAGE *à bord*, come aboard with the boat! the order given to the rowers in the long-boat to bring her aboard, or along-side of the ship.

NAGE *à faire abattre*, pull to leeward! the order to the rowers in a boat, to tow the ship's head to leeward.

NAGE *au vent*, pull to windward, or tow the ship to windward!

NAGE *de force*, pull chearly in the boat!

NAGE *qui est paré*, pull with the oars that are shipped.

NAGE *sec*, row dry! the order to row without wetting the passengers.

NAGE *stribord, & scie bas-bord*, pull the starboard oars, and hold water with the larboard oars!

NAGER, RAMER, or VOGUER, to row, or pull with the oars, in a boat or small vessel.

NAGER *à sec*, to touch the shore with the oars in rowing.

NAGER *tant d'avirons par bande*, to row so many oars on a side.

NAGER *de bout*, to row standing, or with the face towards the boat's head.

NAGER *en arriere*, to back astern with the oars.

NAGER *la chaloupe à bord*, to row the long-boat aboard.

NATES, mats used to line the sail-room, or bread-room; as also to cover the ceiling of the ship's hold when she is laden with corn, in order to preserve the contents.

NAVETTE, a small Indian vessel.

NAUFRAGE, shipwreck.

NAUFRAGÉ, shipwrecked.

NAVIGABLE, capable of navigation.

NAVIGATEUR, a mariner, or seaman.

NAVIGATION *impropre*, coasting, or sailing along shore.

NAVIGATION *propre*, the art of sailing by the laws of trigonometry. See PILOTAGE.

NAVIGER, to sail, or direct a ship's course at sea.

NAVIGER *par terre*, or *dans le terre*, to be ashore by the dead-reckoning; to be ahead of the ship by estimation.

NAVIGER *par un grand cercle*, to sail upon the arch of a great circle.

NAVIRE, a ship. See also VAISSEAU.

Beau NAVIRE *en rade*, a good roader.

NEUVE, a sort of small flight, used by the Dutch in the herring-fishery, and resembling a buss. See BUCHE.

NEZ, the nose, beak, or head of a ship.

NOCHER, a name formerly given to a pilot.

NOCTURLABE, a nocturnal.

NOIALE. See TOILE.

NOIÉ, an epithet which answers to clouded, or indistinct. It is expressed of the horizon, when it cannot be easily distinguished by an observer, in taking an altitude.

NOIRCIR, to blacken, or daub with a mixture of tar and lamp-black; as the wales and black ſtrakes of a ſhip, the yards, bowſprit, &c.

NOLIS, or NOLISSEMENT, a name given in Provence and the Levant to the freight or cargo of a ſhip.

NON-*vûe*, no ſight of; out of ſight; a phraſe which implies the fog or haze of the weather, which intercepts the view of contiguous objects, as the ſhore, rocks, &c.

NORD, the north, or north point.

NORD-EST, the north-eaſt.

NORD-EST *quart à l'eſt*, north-eaſt by eaſt.

NORD-ESTER, to vary towards the eaſt; expreſſed of the eaſt-variation of the compaſs.

NORD-OUESTER, to decline towards the weſt; ſpoken alſo of the magnetical needle.

NOYALE. See NOIALE.

NOYE'. See NOIE'.

NUAISON, a trade-wind, or the period of a monſoon.

O.

OCCIDENT, or OUEST, the weſt.

OCEAN, a name generally given in France to the Weſtern or Atlantic Ocean.

OCTANT, the octant invented by Godfrey and Hadley.

OEIL, YEUX, *ou* TROUS, the holes formed in the clews of a ſprit-ſail to let out the water which falls into it's cavity when the ſhip pitches.

OEIL *de bœuf*. See YEUX.

OEIL *de bouc*, water-gall, or weather-gall.

OEIL *de pié*, or YEUX *de pié*, the eye-let holes wrought in the reef of a ſail, thro' which the points are reeved.

OEIL *de roüe*, the hole in the truck or wheel of a gun-carriage, through which the axle paſſes.

OEILLET, an eye-ſplice on the end of any rope.

OEILLET *d'étai*, the eye of a ſtay which goes over the maſt-head.

OEILLETS *de la tournevire*, the eyes in the two ends of a voyol, which are laſhed together with a laniard when the voyol is brought to the capſtern.

OEILS, the eyes, or hawſes of a ſhip. See ECUBIERS.

OEUVRE-*mortes*, the dead-work of a ſhip, or all that part which is above water, comprehending the quarter-deck, poop, and fore-caſtle.

OEUVRE-*vives*, the quick-work, or all that part of a ſhip which is under water.

OEUVRES *de marée*, the graving, caulking, or repairing a ſhip's bottom, when ſhe is left dry aground during the receſs of the tide.

OFFICIERS *bleu*. See BLEU.

OFFICIERS-*généraux*, the general officers in the French navy; as, the admirals, vice-admirals, rear-admirals, and commodores.

OFFICIERS *de port*, the officers of a dock-yard, appointed to ſee that the ſhipping are properly moored, maſted, rigged, repaired, caulked, and otherwiſe equipped with whatever is neceſſary; according to their deſtination.

OFFICIERS *de ſanté*, officers who ſuperintend the affairs of the quarantine in a port.

OFFICIERS-*majors*, the ſuperior, or commiſſioned officers in a ſhip of war, as the captain, lieutenants, and enſign.

OFFICIERS-*mariniers*, the mechanical or warrant-officers in a ſhip of war; of which the principal are, the maſter, boatſwain, gunner, carpenter, and ſail-maker; as diſtinguiſhed from the military officers deſcribed in the preceding article.

O! *du navire, hola!* hoa, the ſhip, ahoay! the manner of hailing or calling to a ſhip whoſe name is not known.

O! *du Soleil Royal, hola!* hoa, the Royal Sun, ahoay!

O! *d'en haut*, yoa-hoa, aloft there! maſt-head there! &c. the call from the deck to thoſe who are aloft, to attend to ſome order.

O! *hiſſe*, *O! hale*, *O! faille*, *O! ride*, the method of ſinging out, as a ſignal to hoiſt, haul, or rowſe together, on a tackle or rope.

OINT, ſtuff, tallow, or ſuch like material, uſed to pay the maſts, tyes of the topſail-yards, &c.

OLOFE'E, the act of ſpringing the luff, or of hauling cloſe upon a wind.

ORAGE. See TEMPETE.

ORDRE *de bataille*, the line, or order of battle in a naval engagement.

ORDRE *de marche*, the order of ſailing.

ORDRE *de retraite*, the order of retreat.

ORDRES *des vaiſſeaux*, the claſſes into which every rate of ſhips is ſubdivided, in the French navy. See RANG.

OREILLE *de liévre*, a three-ſided, or triangular ſail; as the ſtay-ſails.

OREILLES *de l'ancre*, the broad parts of the fluke of an anchor.

ORGANEAU, the ring of an anchor. See ARGANEAU.

ORGUES, an organ, or machine, ſometimes uſed in a ſea-fight by privateers: it contains ſeveral barrels of muſketoons or ſmall arms, fixed upon one ſtock, ſo as to be all fired together.

ORIENTER *les voiles*, to trim the ſails; or place them in the moſt advantageous manner, to receive the wind, and accelerate the ſhip's courſe.

ORIN, the buoy-rope of an anchor.

ORSE, the larboard ſide, in the dialect of Provence. Alſo the order to luff.

ORSER, to row againſt the wind, or row head-to-wind. This is likewiſe the language of the gallies.

ORTODROMIE, a courſe which lies upon a meridian or parallel.

OSSEC, the water-way, or well-room of a boat.

OSSIERES. See HAUSSIERES.

OUAGE, the track or wake of a ſhip. See HOUAICHE.

Tirer en OUAICHE, to take a ſhip in tow aſtern when ſhe is diſabled.

Trainer un pavillon ennemi en OUAICHE, to drag the colours or enſign of an enemy after the ſhip, ſo as to ſweep the water therewith, as a ſign of victory.

OVERLANDRES, ſmall veſſels navigated on the Rhine and Meuſe.

OUEST, or OCCIDENT, the weſt point of the compaſs or horizon.

OUEST-*nord-oueſt*, *&c.* See ROSE *de vents*.

OURAGAN, an hurricane.

OUVERT, *etre ouvert*, to have any object open in ſailing paſt it; or to be abreaſt of any place, as a road, the entrance of a harbour, or river, &c.

OUVERTURE, an opening, or valley between two hills, beheld from the ſea and ſerving frequently as a land-mark.

OUVRIERS, the artificers, &c. in a dock-yard; alſo the riggers of a ſhip.

OUVRIR, to open, or diſcover two objects ſeparately at ſea, when ſailing at ſome diſtance from them.

P.

PACFIS, the courſes of a ſhip; as, *Le grand* PACFI, the main courſe, or main-ſail.

Le petit PACFI, *ou* PACFI *de bourcet*, the fore-courſe or fore-ſail.

Etre aux deux PACFIS, to be under the courſes.

PACIFIER, to become calm; alſo to fall, or grow ſmooth, when ſpoken of the ſea.

PAGAIE, the paddle of a canoe.

PAGE *de la chambre du capitaine*, the cabin-boy.

PAGES. See MOUSSES *& garçons*.

PAILLES *de bittes*, long iron bolts thruſt into holes in the bits, to keep the cable from ſtarting off.

PAILLOT, the ſteward-room in a row-galley.

PAIS *ſomme*, a ſhoal or ſhallow.

PALAMANTE, a general name given to the oars of a row-galley; which are forty feet and ſix inches in length.

PALAN, a tackle of any kind. See ITAQUE and GARANT.

PALAN *à caliorne*, a ſix-fold tackle. See CALIORNE.
PALAN *à candelette*. See CANDELETTE.
PALAN *d'amure*, a tack-tackle.
PALAN *d'etai*, a ſtay-tackle.
PALAN *de miſaine*, the ſore-tackle.
Grand PALAN, the main-tackle.
PALANQUE', the order to hoiſt, bowſe, or ſet-taught upon a tackle.
PALANQUER, to hoiſt, or bowſe upon a tackle.
PALANQUIN, a jigger-tackle, tail-tackle, or burton.
PALANQUINS *de ris*, the reef-tackles.
PALANQUINS *ſimples de racage*, the nave-lines.
PALANS *de bout*, the ſprit-ſail-haliards.
PALANS *de canon*. See DROSSE *de canon*, & PALAN *de retraite*.
PALANS *de retraite*, the relieving-tackle, or train-tackle of the ordnance.
PALARDEAUX, plugs made to ſtop holes in any part of a ſhip; as hawſe-plugs, ſhot-plugs, &c.
PALE, or PALME, the blade or waſh of an oar.
PALE'AGE, the act of diſcharging any thing with ſhovels, baſkets, &c. as corn, ſalt, or ſuch like materials; for which employment the ſhip's crew can demand no additional pay. See alſo MANEAGE.
En PANNE, lying-by, or lying-to with ſome of the ſails aback; whence
Mettre en PANNE, to bring-to.
PANNEAU, a ſcuttle, or cover of any hatchway in the deck.
PANNEAU *à boite*, the cover of a ſcuttle, with a border round it's edge.
PANNEAU *à vaſſole*, a great hatch, without a border.
Le grand PANNEAU, the main hatch.
PANTAQUIERES, or PANTOCHERES, the cat-harpins, and crane-lines of the ſhrowds.
En PANTENNE, fluttering or ſhivering in great diſorder; expreſſed of the ſails, when out of trim, as in a ſtorm.
Amener les voiles en PANTENNE, to haul down the ſails with the utmoſt expedition; as in a ſquall of wind.
PANTOIRES, pendents on the maſt-heads or yard-arms, wherein to hook preventer-ſhrowds, or yard-tackles.
PAPIERS *& enſeignements*, the papers of a ſhip, comprehending the bills of lading, manifeſt coquets, &c.
PAQUE-BOT, or PAQUET-BOT, a packet-boat, or packet-veſſel; as thoſe which paſs between Dover and Calais, &c.
Faire la PARADE, to dreſs a ſhip, or to adorn her with a number of flags, pendents, and other colours, which are diſplayed from different parts of the maſts, yards, and rigging.
PARADIS, or BASSIN, the baſin of a dock; or an inner harbour.
PARAGE, a ſpace of the ſea appointed as the ſtation wherein to rendezvous or cruiſe; alſo a part of the ſea near any coaſt.
Mouille en PARAGE, moored, or anchored in an open road, or in the offing.
PARC, an incloſure for containing the magazines and ſtore-houſes in a royal dock-yard.
PARC *dans un vaiſſeau*, a cot or pen, wherein cattle are incloſed in a ſhip.
PARCLOSSES, limber-boards.
PARCOURIR, to overhaul; *i. e.* to open or extend the ſeveral parts of a tackle, or other aſſemblage of ropes, communicating with blocks or dead eyes.
PARCOURIR *les coutures*, to ſurvey or examine the ſeams of a ſhip's ſides or decks, and caulk where it is found neceſſary.
PARE', ready, clear, or prepared for any thing.
PARE' *à virer*, ſee all clear to go about! the order to prepare for tacking.
PAREAU, or PARRE, a ſort of large bark in the Indies, whoſe head and ſtern are exactly alike, ſo that the rudder may be hung at either end.
PARER *un cap*, to double a cape. See DOUBLER.
PARER *une ancre*, to ſee the anchor clear for coming-to, &c.
Se PARER, to clear for action, to prepare for battle.
PARFUMER *un vaiſſeau*, to ſmoke a ſhip, and ſluice her with vinegar between-decks, in order to purify her, and expel the putrified air.
PARQUET, a ſhot-locker on the deck; alſo a place where ſhot are kept on a gun-wharf. See EPITIE'.
PARTAGER *le vent*, to ſhare the wind with ſome other ſhip, or hold way with her, without gaining or loſing ground, or without weathering, or falling to leeward.
PARTANCE, the time of departing, or ſailing from a place; alſo a place from whence a ſhip departs.

Coupe

Coup de PARTANCE, a ſignal-gun for ſailing.

Banniere de PARTANCE, the ſignal diſplayed for ſailing.

PAS, a ſtreight or narrow channel; as,

PAS *de* CALAIS, the Streights of Dover.

PASSAGERS, the paſſengers of a ſhip.

PASSE, a canal, channel, or ſmall ſtreight.

PASSE-*port*, a ſea-paſs or paſſport. See CONGE'.

PASSER, to periſh, or be loſt at ſea; as by overſetting, or foundering.

PASSER *au vent d'un vaiſſeau*, to weather, or gain the wind of another ſhip.

PASSER *ſous le beaupré*, to paſs under the bowſprit. This phraſe, which is uſual amongſt Engliſh as well as French ſeamen, implies to go ahead of, or before a ſhip, and run athwart her courſe.

PASSE-*vogue*, the effort of rowing briſkly, or very hard.

PASSE-*volant*, a falſe muſter on the ſhip's books: alſo a wooden-gun, which may terrify a ſhip at a diſtance. See FAUSSES-LANCES.

PATACHE, an armed tender, or veſſel which attends a ſhip of war or fleet: alſo a packet-boat.

PATACHE *d'avis*, an advice-boat. See FRE'GATE *d'avis*.

PATARAS, a preventer-ſhrowd: alſo a ſpare ſhrowd, to be hooked on occaſionally.

PATARASSE, a caulking-iron.

PATRON, the maſter or commander of a merchant-ſhip, or boat, in the dialect of Provence.

PATRON *de chaloupe*, the cockſwain, or coxen, of a long-boat.

PATTE *d'oie*. See MOUILLER *en patte d'oie*.

PATTES *d'ancre*, the flukes of an anchor.

PATTES *d'anſpects*, the claws of a gunner's handſpec.

PATTES *de bouline*, the bowline bridles.

PATTES *de voiles*, the tabling of the ſails at the edges or bolt-ropes.

PAVESADE, a quarter-cloth, or waiſt-cloth. See BASTINGAGE.

PAVILLON, the flag of a ſhip. Alſo a general name for colours.

PAVILLON *de beaupre*, the jack.

PAVILLON *de chaloupe*, the flag carried in a barge or long-boat, when a ſuperior officer is aboard.

PAVILLON *de combat*, the ſignal for engagement.

PAVILLON *de conſeil*, the ſignal for a general council.

PAVILLON *de pouppe*, or *enſeigne de pouppe*, a ſhip's enſign.

PAVILLON *en Berne*. See BERNE.

Baton de PAVILLON, the enſign-ſtaff, flag-ſtaff, or jack-ſtaff.

Vaiſſeau PAVILLON, or ſimply PAVILLON, the flag-ſhip.

Amener le PAVILLON, to ſtrike the flag or colours.

Etre ſous un tel PAVILLON, to be under ſuch a flag, or commanding officer.

Faire PAVILLON *blanc*, to diſplay a flag of truce.

PAUMET, a ſail-maker's palm.

PAVOIS, or rather PAVESADE. See PAVESADE and BASTINGAGE.

PAVOISER, to ſpread the waiſt-cloths.

PECHER *une ancre*, to hook, and heave up from the bottom, another anchor, with that of the ſhip; as when ſeveral anchors lie near to each other, in a common road.

PEDAGNE, or PEDAGNON, the ſtretchers of a row-galley. See alſo BANQUETTES.

PELLES, corn-ſhovels, or ballaſt-ſhovels, uſed in trimming a ſhip's hold.

PENDANT, or FLAMME. See FLAMME.

PENDEUR, or PENDOUR, the pendent of any tackle, runner, &c.

PENDOUR *de caliorne*, the winding tackle-pendent.

PENDOURS *de balancines*, the ſpans of the lifts.

PENDOURS *de bras*, the brace-pendents at the yard-arms.

PENES, pitch-mops. See BATON *à vadel*.

PENNE, the peek of a mizen, or lateen ſail.

PENTURE, a googing, or the eye of a clamp, fitted to receive a gooſe-neck, or ſome bolt of iron which turns therein like a pivot in it's ſocket.

PEINTURES *de gouvernail*, the googings of the rudder. See FERRURE *de gouvernail*.

PEOTE, a light nimble Venetian wherry, uſed frequently as an advice-boat, to carry expreſſes.

PERCEINTES. See PRE CEINTES.

PERCEUR, a perſon who bores the holes

for

for the tree-nails, or bolts, in a ſhip's ſide.

PERROQUET, a top-gallant-ſail.

Mettre les PERROQUETS *en banniere*, to let fly the top-gallant ſheets, as a particular ſignal or ſalute offered to ſome ſhip in company.

PERROQUETS *volans*, flying top-gallant-ſails.

PERRUCHE, the mizen-top-gallant-ſail.

PERTUIS, a dam, or channel of water, confined by a ſluice.

PERTUISANE, a ſort of pike or halbert, uſed to defend a ſhip from being boarded.

PESER, to hang upon, or haul downward on any rope over-head.

PESER *ſur un levier*, to heave, or purchaſe with a handſpec.

PHARE, or *tour à feu*, a watch-tower, or light-houſe on the ſea-coaſt.

PIC *à pic ſur ſa ancre*, cloſe a peek upon the anchor.

PIECE, a cannon. See CANON.

PIECE *de charpente*, a general name for any large piece of timber uſed in the conſtruction of a ſhip.

PIECES *de chaſſe*, the chace-guns, or head-chaces.

PIED *de vent*, a clear ſpot of the ſky, appearing under a cloud to windward.

PIED-*marin*, ſea-ſhoes; expreſſed of a man who has got ſea-legs, or who treads firmly at ſea, as being accuſtomed thereto.

PIE'DROITS, the Samſon's poſts erected in the hold from the kelſon to the lower-deck hatchways, and notched with ſteps.

PIERRIER, a petrero, or ſmall cannon, ſometimes uſed in ſea-fights, and generally charged with muſket-ſhot, or ſwivel-balls.

PIE'TER *le gouvernail*, to mark the ſtern-poſt with feet, in order to diſcover the ſhip's draught of water abaft.

PILIERS *de bittes*, the bits of a ſhip.

PILLAGE, the plunder taken from any enemy after engagement.

PILON, or *petit ecore*, a ſhore which is ſteep to, and but little raiſed above the ſea.

PILOTAGE, the navigating, conducting or ſteering of a ſhip.

PILOTE, a ſea pilot, or the conductor of a ſhip's courſe by the art of navigation; alſo the maſter of a ſhip. See HAUTURIER.

PILOTE *côtier*, or PILOTE *de havre*, a coaſting, or harbour pilot. See LAMANEUR.

PILOTE *hardie*, a daring or enterpriſing pilot.

PILOTER, to pilot a ſhip into, or out of, a harbour or river.

PINASSE, a ſquare-ſterned veſſel, called in England a bark.

PINASSE *de Biſcaye*, a Biſcayan barca-longo.

PINCEAU *à goudronner*, a tar-bruſh.

PINCES *de bois*, a ſort of curved hand-ſpecs. See RENARD.

PINCER *le vent*. See ALLER *au plus près*.

PINNULE, the ſight-vanes of any inſtrument, for obſerving or ſetting a diſtant object at ſea.

PINQUE, a pink, or narrow-ſterned ſhip, with a flat floor.

A PIQUE, a peek, when the cable of a ſhip is hove ſo tight as to bring her directly over the anchor, the cable bearing right down from the ſtem.

PIRIS, a ſort of canoe uſed by the negroes in Guinea, and the Cape de Verds.

PIRATE, a pirate, or free-booter. See alſo CORSAIRE.

PIRATER, to rob at ſea; to infeſt or ſcour the ſeas as a pirate.

PIROGUE, an American canoe.

PISTON, the ſpear-box of a pump.

PITONS *à boucles*. See CHEVILLE *à boucles*.

PIVOT, an iron point which turns in a ſocket; as the foot of the capſtern.

PIVOT *de bouſſole*, the braſs center-pin of the compaſs.

PLAGE, a ſhallow or flat ſhore, without any capes or head-lands to form a road or bay, wherein ſhipping may come to an anchor.

PLAIN, a flat or ſhoal; whence,

Aller au PLAIN, to run aſhore.

PLANCHE, the gang-board of a boat.

PLAQUES *de plomb*, ſheet-lead, uſed for ſeveral purpoſes aboard-ſhip.

PLAT *de la varangue*, the flat or horizontal part of a floor-timber.

PLAT *de l'equipage*, or *un* PLAT *des matelots*, a meſs, or company of ſeven ſailors who eat

eat together. The word literally ſignifies a bowl or platter, in which the whole meſs eat at the ſame time.

PLAT *des malades*, the ſick meſs, under the care of the ſurgeon.

PLAT-BORD, the gunnel, or gun-wale of a ſhip.

PLAT-BORD alſo means waſh-board or weather-board.

PLAT-BORD *à l'eau*, gunnel-in, or gunnel-to; expreſſed of a ſhip that inclines ſo much to one ſide as to make the gunnel touch the ſurface of the water, by crowding ſail in a freſh wind.

PLAT *de rame*, the blade of an oar.

PLATE-BANDS *d'affûts*, the clamps of a gun-carriage, which are uſed to confine the trunnions therein.

PLATE-FORME *de l'éperon*, the platform or grating within the rails of the head.

PLATE-FORMES, an aſſemblage of oak-planks, forming a part of the deck, near the ſide of a veſſel of war, whereon the cannons reſt in their ports.

PLATINES *de lumiere*, the aprons of the cannons.

PLI *de cable*, a fake of the cable.

Filer un PLI *de cable*, to veer away one fake of the cable.

Vaiſſeau qui PLIE *le côté*, a crank ſhip.

PLIER, to bend or ſupple the planks of a ſhip, as by heat and moiſture.

PLIER *le côté*, to lie over in the water; to heel extremely when under ſail.

PLIER *le pavillon*, PLIER *les voiles*, to gather up the fly of the enſign, or furl the ſails.

PLOC, the hair and tar put between the bottom-planks of a ſhip and the ſheathing, to fill up the interval, and preſerve the bottom from the worms.

PLOCQUER, to apply the ſheathing-hair to a ſhip's bottom.

PLOMBER *une navire*, to try whether a ſhip is upright, or to what ſide ſhe heels, by means of a plumb-line and level.

PLONGEUR, a diver, whoſe employment it is to bring any thing up from the bottom, as ſponges, coral, &c.

PLONGER, to duck, or immerſe any thing in the water; alſo to plunge or dive into the water, &c.

PLUMET *de pilote*, or *panon*, a feather-vane, or dog-vane.

POGE, *ou* POUGE, the order to put the helm a-weather, in order to fill the ſails, or bear away. This is the language of Provence. See ARRIVE-*tout*.

POINT, a ſhip's place, as pricked upon a nautical chart.

POINT *d'une voile*, the clew of a ſail.

POINTAGE *de la carte*, the pricking of a courſe and diſtance upon the chart, in order to diſcover the ſhip's place.

POINTE, a point of land projecting into the ſea; a low cape, or promontory.

POINTE *de l'eperon*, the beak of a prow, or cut-water.

POINTE *du compas*, a point of the magnetical compaſs.

POINTE *du nord*, *ou du ſud*, *&c.* the north or ſouth point.

POINTER, to direct or point a gun to it's object.

POINTER *à couler bas*, to point a gun ſo as to ſink a ſhip.

POINTER *à demâter*, to point a gun ſo as to diſable or carry away any maſt.

POINTER *à donner dans le bois*, to level the cannon ſo as to hull a ſhip, or ſtrike the hull.

POINTER *la carte*, to prick the chart. See POINTAGE.

POINTURE, the balance of a ſail, or that part which is faſtened by balancing it in a ſtorm: ſuch is the peek of the mizen, &c.

POITRINE *de gabords*, the filling, or convexity of a ſhip's bottom, as approaching the midſhips from the ſtem and ſtern-poſt.

POLACRE, a polacre, or ſhip ſo called.

POLIBE *d'aſſurance*, a policy of inſurance.

POLICE *de chargement*. See CONOISSEMENT.

POMMES, the trucks, or acorns placed on the flag-ſtaffs, or ſpindles of the maſt-head.

POMMES *de giroüettes*, the acorns placed over the vanes.

POMMES *de racage*. See RACAGE.

POMME *de pavillon*, the truck placed on the top of the flag-ſtaff, or enſign-ſtaff.

POMOYER, to under-run a cable with the long-boat.

POMPE, the pump of a ſhip.

Affranchir, *ou Franchir la* POMPE, to free the ſhip, by diſcharging more water with the pumps than is received by the leaks. See AFFRANCHIR.

A la POMPE! pump ſhip! the order to pump out the water from a ſhip's bottom.

Charger la POMPE, to fetch the pump.

Etre à une, *ou à deux* POMPES, to have one or both

both pumps conſtantly employed to free the ſhip.

La POMPE *eſt engorgée*, the pump is choaked or foul.

La POMPE *eſt éventée*, the pump blows, as being ſplit and rendered unſerviceable.

La POMPE *eſt haute, ou la* POMPE *eſt franche*, the pump ſucks, or is dry.

La POMPE *eſt priſe*, the pump is fetched.

La POMPE *ſe decharge*, the pump has loſt water. See DE'CHARGE.

POMPE *à la Venetienne*, a Venetian pump.

POMPE *de mer*. See TROMPE.

POMPE *en bon état*, POMPE *libre*, a good pump, or a pump in good trim.

POMPES *à roüe & à chaines*, chain-pumps.

POMPES *de maitre-valet*, hand-pumps, uſed for water-caſks, oil-caſks, wine-caſks, &c.

PONENT, the weſt, in the language of Provence: alſo a name given to the Weſtern Ocean.

PONT, the deck of a ſhip.

PONT *à caillebotis, ou à treilles*, a grating-deck.

PONT *coupé*, a deck open in the middle; as in ſome ſmall veſſels that have only part of a deck towards the ſtem and ſtern.

PONT *courant devant arriere*, a deck flush fore and aft.

PONT *de cordes*, a ſort of netting to cover a ſhip's waiſt, and prevent the impreſſion of boarders.

PONT *volant*, a ſpar-deck, or platform.

Entre PONT, between decks.

Faux-PONT, the orlop deck.

Premier PONT, or *franc-tillac*, the lower-deck, or gun-deck.

Second PONT, the middle deck of a ſhip with three decks, or the upper-deck of one with two decks.

Troiſieme PONT, the upper-deck of a ſhip with three decks.

PONTE', decked, or furniſhed with a deck; as oppoſed to undecked or open.

PONTON, a pontoon, for careening or delivering ſhips: alſo a ſort of bridge of boats, compoſed of two punts, with planks laid between them: likewiſe a ferry-boat.

PONTONAGE, the hire of a ferry-boat or pontoon.

PONTONNIER, the maſter of a pontoon; a lighterman.

PORQUES, riders.

PORQUES *acculées*, the after floor-riders.

PORQUES *de fond*, floor-riders.

Allonges de PORQUES, ſuttock-riders.

PORT, a haven, port, or harbour.

PORT-*brut, ou havre brut*, a natural harbour, or port formed by nature.

PORT *de vaiſſeau*, the burthen or tonnage of a ſhip.

PORT *de barre*, an harbour with a bar, that can only be paſſed at, or near high water.

PORT *d'entrée*, or PORTE *de toute marée*. See HAVRE.

Avoir un PORT *ſous le vent*, to have a harbour to leeward, or under the lee.

Fermer le PORTS, *ou* PORTS *fermés*, to lay an embargo upon all the ſhipping of a harbour. See ARRET.

PORTAGE, the ſpace or room in a ſhip's hold allowed to any officer, &c. to contain his private trade, or venture.

PORTE-*boſſoir*. See SOU-BARBE.

PORTE *d'ecluſe*, the flood-gates of a ſluice.

PORTE *gargouſſe*. See LANTERNE *à gargouſſe*.

PORTE-*haubans, ou ecotards*, the channels, or chain-wales of a ſhip.

PORTE-*plein les voiles*, or, ſimply, PORTE-*plein!* keep full! the order to the man who ſteers, to keep the ſails full, and prevent them from ſhivering in the wind.

PORTE-*vergues*, or rather *herpes*, the rails of the head, reaching from the cat-head towards the cut-water. See HERPES.

PORTE-*voix*, a ſpeaking-trumpet.

PORTE *à route*, to ſtand onward, upon the courſe.

PORTELOTS, the thick ſtuff which encircles the ſide of a lighter under the gunnel.

PORTER, to ſail, or conduct a ſhip.

PORTER *au ſud*, &c. to ſtand to the ſouthward, &c.

PORTEREAU, the flood-gate of a ſluice.

POSTE, the quarters where the men are ſtationed in time of battle.

POSTILLON, an expreſs-boat, or poſt-boat.

POT *à brai*, a pitch-pot.

POT-*à-feu*, a fire-pot, or ſtink-pot.

POT *de pompe*, the lower pump-box. See alſo CHOPINETTE.

POTENCE *de brinquebale*, the cheeks of a common pump.

POUDRE, gun-powder.

Soute au Poudre, magazine for gun-powder.

POUDRIER,

POUDRIER, an half-hour watch-glaſs.
POUGER, or *moler en poupe*, to bear up, in the dialect of Provence.
POULAINE, *éperon*, the knee of the head, or cut-water. See alſo EPERON.
POULAINES, the props which ſupport a ſhip's ſtem, when ſhe is on the ſtocks.
POULIE, a block of any kind wherein a running rope may be reeved.
POULIE *coupée*, or *à dents*, a ſnatch-block. See alſo GALOCHE.
POULIE *détropée*, a block ſhaken out of it's ſtrop.
POULIE *de grand driſſe*, one of the main jear-blocks.
POULIE *de guindereſſe*, a top-block.
POULIE *de palan*, a tackle-block.
POULIE *d'itague du grand hunier*, the main-topſail tye-block.
POULIE *double*, a double-block.
POULIE *ſimple*, a ſingle block.
POULIES *des caliornes*, winding-tackle-blocks; or other blocks furniſhed with three ſheaves.
POULIES *de driſſe de miſaine*, the ſore jear-blocks.
POULIES *d'écoutes de hune*, topſail ſheet-blocks, fitted alſo to contain the lower-lifts.
POULIES *de retour d'écoutes de hune*, the quarter-blocks for the topſail-ſheets.
POUPPE, the after-parts of a ſhip, both above and below. See ARCASSE, ARRIERE, and DUNETTE.
Vaiſſeau à POUPPE *quarrée*, a ſquare-ſterned ſhip; ſuch as are all ſhips of war.
Mettre vent en POUPPE, to bear away before the wind.
Moüiller en POUPPE, to moor by the ſtern, or get out an anchor aſtern.
Vent en POUPPE, a ſtern-wind, or wind right aft.
POUSSE-*barre!* heave chearly! heave heartily! the order or exhortation to thoſe who heave at the capſtern, to puſh forcibly on the bars.
POUSSE-*pied*. See ACCON.
PRAME, a pram, lighter, or barge of burden.
PRATIQUE, in a naval ſenſe, implies free intercourſe or communication with the natives of a country, after having performed quarantine.
PRE'CEINTES, the wales of a ſhip.
PRE'LART, or PRE'LAT, a tarpauling.
PRENDRE *chaſſe*. See CHASSER.
PRENDRE *hauteur*, to take the altitude of the ſun, or a ſtar. See HAUTEUR.
PRENDRE *les amures*, to get aboard the tacks. See AMURER.
PRENDRE *terre*. See TERRE *& terrir*.
PRENDRE *vent devant*, to be taken with the wind ahead.
PRENDRE *un boſſe*, to make faſt; or clap on the ſtopper.
PRENDRE *un ris*, to take in a reef.
PRENEUR, *vaiſſeau* PRENEUR, the captor, or veſſel that has taken a prize.
PRES *& plein*! full and by! the order to the ſteerſman to keep the ſhip cloſe to the wind, without ſhaking the ſails.
PRESENTER *la grande bouline*, to ſnatch the main-bowline, or put it into the ſnatch-block.
PRESENTER *au vent*, to ſail ſo as the ſhip ſtems, without making lee-way.
PRESSER, to preſs, or conſtrain into ſmall compaſs in ſtowage; as cotton, wooll, or ſuch like material.
PRETRE *le côté*, to range abreaſt of a ſhip, in order to give her a broadſide. See EFFACER.
PREVOT *général de la marine*, a provoſt-marſhal of the marine, or officer whoſe duty reſembles that of the judge-advocate of the naval courts-martial.
PREVOT *marinier*, the ſwabber of a ſhip, who alſo chaſtiſes the criminals, as being uſually the moſt abandoned of the crew: this part of his duty is performed in Engliſh ſhips by the boatſwain.
PRIME *d'aſſurance*, inſurance paid by the merchant for inſuring the ſhip's cargo.
PRISE, a prize, or ſhip taken from the enemy at ſea.
PROFIT *avantureux*, the intereſt acquired by bottomry. See BOMERIE.
PROFONTIE', a ſhip that draws much water, or takes a large volume of water to float her.
PROLONGER *une navire*, to lay a ſhip along-ſide of ſome other.
PROMONTOIRE, a cape, head-land, or fore-land.
PROUE, the prow of a ſhip. See AVANT.
Donner la PROUE, to appoint the courſe, or rendezvous of the gallies.
PROVISIONS, a general name for the proviſions, and the warlike ſtores of a ſhip.
PUCHOT. See TROMPE.

PUISER, to leak, or make water at ſea.
Puiser pour le bord, to ſhip ſeas, or take in water, either over the gunnel, or at the ports in the ſide.

PUITS. See Archipompe.
PUY, a great depth of the ſea on a level bottom.

Q.

QUAI, a wharf or key on the ſide of a harbour or river.
Amarée à Quai, *rangé à* Quai, moored along-ſide of a key or wharf.
QUAIAGE, wharfage.
QUAICHE, a ketch, or ſhip ſo called.
QUARANTAINE, quarantine.
Faire Quarantaine, to perform quarantine.
QUARANTENIER, a rope of the ſize of a ratling-line, uſed as a laſhing, &c.
QUARRE' *de reduction*. See Quartier *de reduction*.
Quarre' *naval*, the naval ſquare, a ſcheme drawn on a ſhip's quarter-deck, to repreſent the diviſion of a fleet into three columns, and exhibit the ſtation of each particular ſhip in the order of ſailing: it is uſed to direct and regulate the movements of each ſhip with regard to the reſt, and preſerve the whole fleet in uniformity.
QUART *de rond*, *faloire*, *tamiſoille*, the tranſom, upon which the tiller traverſes in the gun-room. See Traverse.
Quart, the watch kept in a ſhip, comprehending the time of it's continuance, and the people employed to keep it.
Quart *bon*, or *bon* Quart, keep a good look-out afore! look well out afore there!
Quart *du jour*, the day-watch.
Prendre le Quart, to ſet the watch.
Au Quart, *au* Quart! the manner of calling the watch to relief, as, the watch, hoay! the ſtarboard watch, hoay!
Faire bon Quart *ſur la hune*, to keep a good look-out in the tops.
Le premier Quart, or Quart *de tribord*, the ſtarboard-watch. See alſo Tribordais.
Second Quart, or Quart *de bas-bord*, the larbord-watch. See Basbordais.
QUARTS *de vent*, the quarter-points of the compaſs, or thoſe which lie on each ſide of the cardinal and intermediate points, and are diſtinguiſhed in Engliſh by the word *by*; as N. by E. N. E. by N. &c.
QUARTIER *Anglois*, or Quart *de nonante*, a Davies's quadrant.
Quartier *de reduction*, a ſinical quadrant, uſed by the French pilots in working their days works, to diſcover the ſhip's place.
Quartier-*maître*, an officer reſembling the boatſwain's mate of an Engliſh ſhip.
Vent de Quartier, *ou vent largue*, a large, or quartering wind.
QUERAT, the planks of a ſhip's bottom, comprehended between the keel and the wales.
QUETE, the rake of a ſhip abaft, or the rake of the ſtern-poſt.
QUEUE *d'une armée navale*, the rear of a fleet of ſhips of war.
Queue *de rat*, tapering to the end; expreſſed of ſuch ropes as are pointed, or tapering toward the end, as the tacks, &c.
QUILLE, the keel of a ſhip.
Quille-*fauſſe*. See Fausse-quille.
QUINTAL, an hundred weight.
A QUITTE, the ſtate of the anchor when it is hove out of the ground in a perpendicular direction.

R.

RABANER, to fit a ſail with rope-bands and earings, ready for bending to it's yard.

RABANS, a general name given to earings, gaſkets, knittles, and rope-bands.

RABANS *d'avuſte*, a ſort of braided knittles, like thoſe formed to point a rope.

RABANS *de ferlage*, the gaſkets employed to furl the ſails to their yards.

RABANS *de pavillon*, the rope-band of a flag or enſign.

RABANS *de peinture*, the head-earings, or reef-earings of a ſail.

RABANS *de tétiere*, the rope-bands of any ſail.

RABATTUES, the intervals between the drift-rails of a ſhip; this term is peculiar to ſhipwrights.

RABLES, the floor-timbers of a boat.

RABLURE, the rabbet or channel cut in the keel, ſtem, and ſtern-poſt, to receive the edges of the garboard ſtreaks, and the ends of the planks afore and abaft.

RACAGE, a parrel with ribs and trucks.

RACAMBEAU, a traveller, or ſlender iron ring, which ſometimes encircles the maſt of a long-boat, ſerving as a parrel to the yard or gaff.

RACCOMMODER, to repair or refit a ſhip's rigging. See RADOUBER.

RACHE *de goudron*, the dregs of bad tar.

RACLE, or GRATOIR, a ſcraper, uſed to clean a ſhip's ſide, deck, or bottom.

RACLE-*double*, a two-edged, or double ſcraper.

RACLE-*grande*, a large ſcraper, uſed to clean the ſhip's bottom under water.

RACLE-*petite*, or *petite* RACLE, a ſmall ſcraper, employed to ſcrape the planks, &c. above the water.

RACLER, to ſcrape the ſides, &c. of a ſhip.

RADE, a road, or road-ſtead.

RADE *foraine*, a free road, or road where ſhips of all nations are permitted to anchor.

RADEAU, a raft.

RADER, to arrive in a road.

RADOUB, the repair of a ſhip in a dock-yard, &c. or the employment of the artificers to cloſe the breaches in her hull with planks, timber, or ſheet-lead; as alſo to ſtop the leaks by caulking, and pay the bottom with ſtuff.

RADOUBER, to repair a ſhip, or give her a repair.

RAFFALES, or RAFFALS, ſudden and violent ſqualls of wind.

RAFRAICHIR *le canon*, to cool or refreſh a cannon in battle, as with a wet ſponge, ſometimes dipped in vinegar.

RAFRAICHIR *la fourrure*, to freſhen the hawſe.

Le vent ſe RAFRAICHIR, the wind freſhens, or increaſes.

RAFRAICHISSEMENT, a ſupply of freſh proviſions of all ſpecies.

RAISONNER *à la patache*, or *à la chaloupe*, to render an account of a voyage to a viſiting-boat, after arriving near any port, in order to obtain permiſſion to enter the harbour.

RALINGUER, *Mettre en* RALINGUE, or *Tenir en* RALINGUE, to ſhiver a ſail in the wind. See FASIER.

RALINGUES, the bolt-ropes of a ſail.

Mets en RALINGUE, or *fais* RALINGUER! luff her up in the wind, ſhake her up in the wind, let the ſails touch! the order to the helmſman to ſteer the ſhip ſo as to let the ſails ſhake with their edges to the wind.

RALLIER *une navire au vent*, to haul the wind again, or bring a ſhip to the wind after ſhe had yawed to leeward.

Se RALLIER, to approach any object at ſea.

RAMBADES, two poſts or platforms in the fore-part of a galley, whereon the muſketeers ſtand to fire.

RAMBERGE, a ſort of packet-boat, advice-boat, or tender.

RAME, an oar.

Plat, or *pale de la* RAME, the blade, or waſh of an oar.

RAMER. See NAGER.

RAMEUR, a rower.

RANG, the rate of ſhips of war. As the diviſion of the French navy into claſſes or orders differs from the arrangement of the Engliſh fleet, it appears neceſſary to mark that difference in this place.

The principal French ſhips of war are divided into three rates, each of which is ſubdivided into two orders. All the inferior ſhips, which are not comprehended in thoſe rates and orders, are called *frégates* and *corvettes*. See FRE'GATE, &c.

A ſhip of the firſt order, of the firſt rate, carries from 110 to 120 guns.

Ships of the ſecond order, of the firſt rate, carry from 110 to 90 guns.

Ships of the firſt order, of the ſecond rate, carry from 90 to 74 guns upon three decks.

Ships of the ſecond order, of the ſecond rate, carry from 74 to 60 guns upon two decks, with the quarter-deck and fore-caſtle.

Ships of the firſt order, of the third rate, carry from 60 to 50 guns upon two decks, &c.

Ships of the ſecond order, of the third rate, which are now generally called *frégates*, carry from 50 to 46 guns upon two decks, &c.

The *frégates* from 46 to 32 guns, have ſometimes two tiers of cannon complete; but all thoſe from 36 to 20, have in general but one tier of cannon, the reſt being carried on the quarter-deck and fore-caſtle.

RANG *de rameurs*, a bank of rowers, or bank of oars.

RANGER *la côte*, or RANGER *la terre*, to coaſt, or range along-ſhore.

RANGER *le vent*, to claw the wind, or haul cloſe to the wind.

Le vent ſe RANGE *de l'avant*, the wind hauls forward, the wind heads us, or takes us a-head.

RANGUE! ſtretch along, or, clap on here many hands! the order to the ſailors to range themſelves along, ſo as to haul upon any rope, tackle, &c.

RAPIDE, a freſh in a river.

RAQUE, a general name for trucks, but particularly the trucks of a parrel. See alſo *Pomme de* RACAGE.

RAQUE *de haubans*, a truck laſhed to the ſhrowds, through which a running rope may be reeved.

RAQUE *encouchée*, a truck encircled with a notch, ſo as to receive the ſpun-yarn by which it may be faſtened to a ſhrowd, ſtay, or back-ſtay.

RAQUE *gougée*, a truck hollowed on one ſide, ſo as to incloſe the rope to which it is faſtened.

RAQUE, chafed or rubbed; expreſſed of a cable, or other rope, which is galled on the outſide for want of ſervice.

RAQUER, to fret, chafe, or rub.

RARRIVE'E, the movement of coming-to, after having fallen off, when a ſhip is lying-by, or trying.

RAS, a ſmall veſſel or boat without a deck.

RAS *à l'eau*, a low-built veſſel, or one which carries her guns very little above the ſurface of the water.

RAS *de courant*. See RAT.

RASE, a compoſition of pitch and tar, uſed to pay a ſhip's ſeams.

RASER *un vaiſſeau*, to cut down a ſhip, or take off part of her upper-works, as the poop, quarter-deck, or fore-caſtle, in order to lighten her, when ſhe becomes old and feeble.

RASTEAU, or RATELIER, the rack or range of blocks ſometimes placed on each ſide of the gammoning of a ſhip's bow-ſprit.

RASTEAUX, or RATEAUX, the cleats nailed on the middle of a yard, to confine the parrels, and tye, or jear-blocks, &c.

RASTEAUX, or *Rateliers à chevillots*, ranges, or croſs-pieces, faſtened to the ſhrowds, or otherwiſe, in which pins are fixed to belay the running-rigging.

RAT, a ſhipwright's floating ſtage, uſed for repairing or caulking a ſhip's bottom, &c.

RAT, or RAS, a race, or dangerous whirlpool; as the race of Portland, &c.

RAT. See COUET *à queüe de rat*.

RATION, the allowance of bread, fleſh, wine, pulſe, &c. diſtributed to the different meſſes in a ſhip.

RATION *double*, a double allowance, given on any particular occaſion of rejoicing.

RATION *et demi*, the allowance of a ſea-officer in the French fleet.

RAVALEMENT, a platform on the poop of ſome ſhips, where the marines ſtand to diſcharge their ſmall arms.

REALE, the royal galley, a name given to

to the principal galley of a kingdom. See GALERE *réale*.

REBANDER, a phraſe amongſt the common ſailors, ſignifying to carry over to the other ſide of the ſhip.

REBANDER *à l'autre bord*, to ſtand upon the other tack; to ſteer a different courſe.

REBORDER, to fall aboard or along-ſide of a ſhip a ſecond time.

RECHANGE, a general name for the ſtores of a ſhip; or the ſpare-rigging, ſails, &c. which are in reſerve to ſupply the place of what may be loſt or diſabled.

RECLAMPER, to fiſh a maſt or yard when it happens to be ſprung.

RECONNOITRE *un vaiſſeau*, to approach a ſhip, in order to diſcover her ſtrength, and of what nation ſhe is.

RECONNOITRE *une terre*, to ſurvey or obſerve the ſituation of a coaſt attentively.

RECOURIR *les coutures*, to run over the ſeams of a ſhip in caulking; to caulk them lightly and expeditiouſly.

RECOURIR *ſur une manœuvre*, to underrun a rope or cable.

Faire RECOURIR *l'ecoute*, *la bouline*, *le couet de revers*, to haul in the ſlack of the lee-tack or bowline, or of the weather-ſheet.

RECOUVRE! rowſe-in, or haul-aboard!

RECOUVRER, to rowſe-in, or haul any rope into the ſhip, when it hangs ſlack in the water, or otherwiſe.

RECOUX. See REPRISE.

RECUL *de canon*, the recoil of a cannon.

REFAIT, ſquared, or prepared for uſe; expreſſed of a piece of timber hewn to it's proper form and ſize.

REFLUX *de la mer*, the ebb-tide. See FLUX.

REFOULER, to ſtem the tide, or to ſail againſt it's direction.

La mer REFOULE, the tide ebbs; the water falls.

REFOULOIR, the rammer of a great gun, called alſo FOULOIR.

REFOULOIR *de cordes*, a rope-rammer.

REFRAICHER, to freſhen the hawſe by a renewal of ſervice.

Se REFRANCHIR, to be freed by the pumps, or to have the quantity of water in a ſhip's hold diſcharged by pumping.

REFREIN, the repetition of the daſhing and breaking againſt rocks, &c. expreſſed of the waves upon the ſea-ſhore.

REFUSER, to fall off again, when in ſtays; expreſſed of a ſhip that will not go about, or ſtay; as,

Le vaiſſeau a REFUSE', the ſhip will not come to the wind; or will not ſtay.

REGATES, a courſe or race of boats in the great canal of Venice.

RELACHER, to bear away for, or put into a harbour under the lee.

RELACHE, the harbour where a ſhip has taken refuge or ſhelter, as from a contrary wind.

RELAIS. See LAISSES.

RELEVEMENT, the ſheer of a ſhip's deck, or the gradual riſing of the deck afore and abaft.

RELEVER, to bring a ſhip afloat, after ſhe had lain aground for ſome time; alſo to right a ſhip after ſhe had lain upon a careen.

RELEVER *l'anere*, to weigh the anchor again, and change it's ſituation.

RELEVER *le quart*, or *le timonnier*, to relieve the watch, or the helmſman.

RELEVER *les branles*, to laſh up the hammocs, in order to make a clear paſſage between-decks. See BRANLE BAS.

RELEVER *une côte*, to ſurvey a coaſt; or to draw a plan or chart thereof.

RELEVER *un vaiſſeau*, to ſteer by the compaſs, or ſhape the courſe thereby.

REMEDIER *à des voies d'eau*, to ſtop or ſtanch the leaks.

REMOLE, a dangerous whirlpool.

REMONTER, to ſail up a river, as from the ſea.

REMORQUER, to tow a ſhip by a boat, or other ſmall veſſel with oars.

REMOULAT, a perſon who has the charge of the oars in a row-galley.

REMOUX, the eddy, or dead-water, left behind a ſhip's ſtern when ſhe is advancing under ſail.

RENARD, a ſort of handſpec, or lever, with an iron claw, uſed to remove large pieces of timber, &c. in a dock-yard.

RENARD is alſo a traverſe-board.

RENCONTRE! ſhift the helm! or ſhift over the helm! the order to the helmſman, to meet the ſhip, right the helm, or put it towards the oppoſite ſide, in order to ſave the ſhip's ſheet.

RENDEZ VOUS, the rendezvous, or place of deſtination of a fleet of ſhips.

RENDRE *le bord*, to anchor, or come to an anchor in ſome road or harbour.

RENTRE'E, the tumbling-home of the top timbers. See RETRECISSEMENT.

RENVERSEMENT, the ſhifting of a cargo from one ſhip to another.

REPOUSSOIR, a driving-bolt, uſed by ſhipwrights to knock out ſome other bolt from it's ſtation.

REPRENDRE *une manœuvre*, to ſheep-ſhank or ſhorten a rope.

REPRISE, a retaken ſhip.

RE'SINE, refin, uſed in paying a ſhip's ſides or bottom.

RESSAC, the ſhock, or breaking of a wave upon the ſhore, together with it's retreat into the ſea.

RESSIF, or RECIF, a reef, or ridge of rocks lying under water.

RESTAUR, the reſtoration, or loſs made good by an inſurer.

RESTER, to bear upon any point of the compaſs; as, *un vaiſſeau nous* RESTE *au ſuds*, a ſhip bears ſouth of us, &c.

RETENUE, faſtened, or hardened-home in it's place; expreſſed of a piece of timber in ſhip-building, which is firmly wedged into it's place, as by rabbeting, tenenting, &c.

Corde de RETENUE, a tackle-fall. See alſo CORDE *de retenue* & ATTRAPE.

RETORSOIR, a ſpun-yarn winch. See MOULINET.

RETOUR *de marée*, the turn of the tide, or the beginning of the ebb.

RETRAITE *de pirates*, a neſt of pirates; a harbour of free-booters.

RETRAITES *de hune*, or *cargues de hune*, the clue-lines, bunt-lines, and reef-tackles of the topſails.

RETRANCHEMENT, a temporary apartment formed in a ſhip, for ſome particular occaſion.

RETRECISSEMENTS *des gabaris*, the tumbling-home of the top-timbers, where a ſhip grows narrower above her breadth. See REVERS.

REVENTER, to fill the ſails again; to brace about, and fill.

REVERS, a general name for thoſe pieces of timber whoſe convexity lies inward in a ſhip's bottom or ſides.

Alonges de REVERS, the top-timbers.

Genoux de REVERS, the lower-futtocks in the fore and after parts of the ſhip.

Manœuvres de REVERS, the ropes which are out of uſe while they lie on the lee-ſide, as the lee-bowlines, lee-tacks, &c.

REVIRE, the ſituation of a ſhip immediately after having tacked, and ſtanding on the other tack.

REVIREMENT, the act of going about, by tacking or veering.

REVIREMENT *par la tête, ou par la queüe*, to tack a fleet or ſquadron of ſhips of war by the van or rear, ſo that the foremoſt or aftmoſt ſhips go about firſt, to preſerve the order of the line.

REVIRER, to put about; to change the courſe of a ſhip. See MANEGE.

REVIRER *dans l'eaux d'une navire*, to tack in a ſhip's wake, and ſtand on the ſame courſe, aſtern of her.

REVOLIN, a ſudden guſt of wind, which blows off the ſhore, as by rebound from the adjacent hills.

RIBORD, the ſecond plank, or ſtreak of planks, on a ſhip's bottom, counting from the keel. See GABORD.

RIBORDAGE, the damage due from one ſhip to another, as eſtabliſhed by merchants, when the latter has ſuſtained any hurt from the miſconduct or neglect of the former.

RIDE, a laniard.

RIDER, to haul taught, or pull ſtrait.

RIDER *la voile*. See RIS.

RIDES *de haubans*, the laniards of the ſhrowds.

RIDES *d'étai*, the laniards of the ſtays.

Longue RIME, or *Donne longue* RIME! row a long ſtroke! the order to the rowers to pull with a long ſweep.

Bon RIME! the order to the ſtrokeſman of the boat, or he who rows the after oar, to give a good ſtroke, as an example for the reſt to follow.

RINGEOT, or BRION, the fore-foot. See BRION.

RIS, the reef of a ſail.

Prendre le RIS, to reef a ſail, to take in a reef.

RISSONS, grapplings, with four claws, uſed as anchors in a galley.

RIVAGE, the banks of a river; or the ſea-ſhore, upon which the tide ebbs and flows between high and low water-mark.

RIVER *un clou*, to rivet a nail.

ROC *d'iſſas*, or BLOC *d'iſſas*. See SEP *de driſſe*.

ROCHER, ROC, or ROCHE, a rock, or key; a ridge, or reef of rocks in the ſea, or on the coaſt.

ROCHES *cachées*, lurking rocks, or rocks under water.

RODE *de poupe*, & RODE *de proue*, the ſtern-poſt, and ſtem of a galley.

ROINETTE, a marking-iron, to mark timber, or caſks which are ſhipped for a voyage.

RONDEUR, the curve, ſweep, or compaſs of a piece of timber uſed in ſhip-building.

RONGÉ, worm-eaten; expreſſed of a ſhip's bottom, when it is much injured by the worms, as in a ſouthern voyage.

ROSE *de vents*, or ROSE *de compas*, the card or face of a ſea-compaſs.

ROSTER, to woold a maſt, yard, or boom.

ROSTURES, the wooldings of a maſt, &c.

ROUANE *de pompe*, a great pump-borer; whence,

ROUANER *une pompe*, to enlarge the bore or channel of a ſhip's pump.

ROUCHE *d'un vaiſſeau*, the hull of a ſhip, without maſts or rigging.

ROUER, *une manœuvre*, to coil a rope.

ROUER *à tour*, to coil a rope with the ſun, i. e. according to the apparent courſe of the ſun in north-latitude.

ROUER *à contre*, to coil a rope againſt the ſun.

ROUES *d'affût de canon*, the trucks of a gun-carriage.

ROUET *de poulie*, the ſheave of a block.

ROUET *de poulie de chaloupe*, the ſheave of a long-boat's davit; alſo the ſheave on the top of her ſtem or ſtern-poſt, for weighing an anchor.

ROULEAU, a roller or cylindrical piece of wood placed under any weighty body, in order to move it with greater facility by means of handſpecs, &c.

ROULER, to roll tumultuouſly; expreſſed of the waves of a ſwelling ſea.

ROULIS *d'un vaiſſeau*, the rolling-motion of a ſhip.

ROUTE, the courſe, or way of a ſhip; alſo the place of her deſtination.

ROUTE-*fauſſe*, or *fauſſe-route*, the errors of a courſe; or the deviations from the right courſe, occaſioned by the lee-way, drift, currents, chaſing, &c.

A la ROUTE! ſteer the courſe! the order to the helmſman to keep the ſhip ſteady in her courſe.

Porter à ROUTE, or *faire droite* ROUTE, to make a ſtraight courſe; to ſail onward, without touching at any port in the paſſage.

ROUTIER, a book or collection of charts, bearings, diſtances, ſoundings, and perſpective views of the coaſts of any country.

RUBORD, or RIBORD. See RIBORD.

RUM, or REUN. See CALE.

Donner RUM *à une roche*. See FAIRE *bonneur*.

RUMB *de vent*, a point of the compaſs. See AIR *de vent*, & ROSE *de vents*.

S.

SABLE, a watch-glaſs of any meaſure of time. See alſo HORLOGE.

SABLE *mouvant*, a quick-ſand, or ſhifting-ſand.

SABORD, a gun-port in the ſhip's ſide; whence,

Fermer les SABORDS, to let fall, or ſhut in the port-lids.

Faux-SABORD, a falſe port painted on a ſhip's ſide, and correſponding with a wooden gun, both of which are calculated to deceive an enemy in time of war.

SABORDS *pour le leſt*, ballaſt-ports.

SACHETS *de mitrailles*, grape-ſhot, or partridge-ſhot.

SAFRAN *de gouvernail*, the after-piece of a rudder, uſed to augment it's breadth.

SAFRAN *de l'etrave*, an additional piece of timber fayed on the fore-part of the cut-water, to enlarge it immediately above the fore-foot, and enable the ſhip to hold the wind better.

SAILLE! rowſe together! a manner of ſhouting amongſt the ſailors, as a ſignal to pull or heave all at once.

SAIN, clear, ſafe, or clean; as,

Côte-SAINE, a clean bottom, or clear coaſt, which has no rocks or ſands near it.

SAINT *aubinet*. See *Saint* AUBINET.

SAINTE-*barbe*, or *chambre des canonniers*, the gun-room of a veſſel of war.

SAIQUE, a ſort of Grecian or Turkiſh ketch.

SAISINE, a ſeiſing or laſhing of any kind.

SAISINE *de beaupré*, or LIURE, the gammoning of the bowſprit. See LIURE.

SAISIR, to ſeize or faſten any rope with a laſhing, &c. See AMARRER.

SALE, foul; an epithet given to a coaſt full of dangerous rocks, or ſhallows, breakers, &c.

Vaiſſeaux SALES, foul ſhips, or ſhipping with foul bottoms.

SALUER, to ſalute; to do homage at ſea, by offering a ſalute.

SALUER *à boulet*, to ſalute by firing with ſhot; being an homage paid only to the king.

SALUER *de la mouſqueterie*, to ſalute by firing a volley of ſmall-arms.

SALUER *de la voix*, to ſalute with three chears, &c.

SALUER *des voiles*, to ſalute by lowering the ſails.

SALUER *de canon*, to fire a ſalute of cannon.

SALUER *de pavillon*, to ſalute by ſtriking, or hauling-in the colours.

SALUT, a ſalute of any kind offered at ſea.

Rendre le SALUT, to return the ſalute.

SAMEQUIN, a ſort of Turkiſh merchant-ſhip.

SANCIR, to ſink, or founder at ſea; whence,

SANCI *ſous ſes amarres*, foundered at the anchors.

SANDALE, a ſort of lighter uſed in the Levant.

SANGLES, mats, or ſmall panches formed of ſpun yarn.

SAPINETTES, a ſort of barnacles. See CRAVAN.

SARANGOUSTI, a peculiar gum, uſed to pay the ſeams of a ſhip in the Eaſt-Indies, inſtead of pitch.

SART, ſea-weed, wreck, or tangles; the alga-marina.

SARTIE, the rigging of a ſhip, in the dialect of Provence.

SASSES, buckets to draw water, for waſhing the decks, &c.

SAUGUE, a fiſhing-boat of Provence.

SAUSISSON, the trough, or ſauſage, filled with powder, which communicates the flame from the train to the fire-trunks or powder-barrels in a fire-ſhip.

SAUT, a water-fall in a river, which renders it unnavigable in that part.

Donner un SAUT *à la bouline*, to check the bowline.

SAUTE, an expreſſion of command, which anſwers to away-up, or away-out to ſuch a place! &c. as SAUTE *ſur la beaupré!* away-out on the bowſprit! &c. SAUTE *ſur la vergue!* go up to the yard, or out upon the yard, &c.

SAUTER, to veer, to ſhift ſuddenly; expreſſed of the wind when it changes to another point of the compaſs.

SAUVAGE, or SAUVEMENT, ſalvage; the payment of ſalvage.

SAUVE-*gardes*, the ridge-ropes which extend the nettings of a ſhip's head.

SAUVE-*gardes*, or *tire-veilles*, the horſes, or main-ropes of the bowſprit.

SAUVE-*gardes de gouvernail*, the rudder-pendents, with their chains.

SAUVE-*rabans*, the pudenings of the yards, uſed to preſerve the rope-bands from being galled by the top-ſails ſheets.

SAUVEURS, perſons employed in recovering any ſtores, rigging, &c. from a wreck on the ſea-coaſt.

SCIER *à culer*, to back a-ſtern with the oars; to row ſtern-foremoſt.

SCIER *ſur le fer*, to ſupport the cable of a galley by rowing with the oars, when ſhe is at anchor in a ſtorm, and in danger of driving aſhore.

Mettre à SCIER, *ou mettre à culer*, to back the ſails, or lay them aback, ſo as to make the veſſel fall aſtern.

SCIE-*babord*, pull the larboard-oars, or pull to ſtarboard!

SCIE-*tribord*, pull the ſtarboard-oars, or pull to port!

SCITIE, a ſettee, or particular kind of Italian bark with two maſts.

SCORBUT, or SCURBOT, the ſcurvy, a well known marine diſtemper.

SCOUE, the extremity of a floor-timber, where it is joined to the lower futtock.

SCUTE, a ſkiff, or ſmall boat, belonging to a ſhip.

SEC, dry-aground; the ſituation of a ſhip laid aſhore to be repaired, &c.

A SEC, or *à mâts & à cordes*, a-hull, or under

under bare poles. See METTRE *à ſec.*

SECOND, or *vaiſſeau* SECOND. See MATELOT.

SECRET *d'un canon*, the train of a piece of ordnance, which communicates with the touch-hole.

SECRET *d'un brulot*, that part of the train of a fire-ſhip where the match or fuſee is laid by the captain, as ready for inflamation.

SEILLURE. See SILLAGE.

SEIN, a ſmall bay or gulph with a narrow entrance: alſo a SEIN, or capacious fiſhing-net of a particular conſtruction, uſed on the ſea-coaſt.

SEIN *d'une voile*, the bight, cavity, or belly of a ſail.

SEJOUR, the ſpace of time that a ſhip remains in any port whereat ſhe touches in the courſe of a voyage.

SELLE *de calfat*, a caulking-box, which contains the inſtruments and materials uſed in caulking a ſhip.

SEMAQUE, or SEMALE, a ſmack or fiſhing-ſloop.

SEMELLES, or DERIVES, lee-boards.

SENAU, a ſnow; alſo a ſmall Flemiſh veſſel rigged like a ſmack.

SENTINELLE *de chaloupe*, the keeper of the long-boat.

SEP *de driſſe*, the knights, or knight-heads of the jears, with their ſheaves: theſe machines are no longer uſed in Engliſh veſſels of war.

SERGENT, a wraining bolt, uſed to bend a ſhip's planks into their places. See ANTOIT.

SERRAGE *ou* SERRES *de vaiſſeau*, a general name for thoſe planks of a ſhip which are called *thick-ſtuff* by our ſhipwrights.

Faux SERRAGE, looſe planks laid occaſionally as a platform for a ſhip's floor when ſhe has no ceiling.

A la SERRE, houſing, or ſecuring, the guns by tackles and breechings.

SERRE-*bauquieres*, thick ſtuff placed under the clamps, in a ſhip's ſide.

SERRE-*boſſe*, the ſhank painter of the anchor.

SERRE-*goutieres*, the water-ways of a ſhip.

SERRER *des voiles*, to ſhorten ſail.

SERRER *la file*, to cloſe or contract the line of battle, by making the ſhips draw nearer to each other.

SERRER *le vent*, to haul the wind; to haul upon a bowline.

SERRER *les voiles*, to furl, or hand the ſails. See FERLER.

Faire SERVIR, to fill the ſails after they had been ſhivering, or laid aback for ſome time.

SEUILLETS *de ſabords*, the port-ſells, or lower part of the gun-ports.

Hauteur des SEUILLETS, the heighth of the port-ſells from the deck immediately beneath them.

SIAMPAN, a ſmall coaſting-veſſel of China, with one ſail, and two, four, or ſix oars; extremely light and expeditious.

SIFFLEMENT, the whiſtling of ſhot as it flies through the air when diſcharged from a cannon.

SIFFLET, a boatſwain's call.

SIGNAL, a general or particular ſignal uſed at ſea.

SILLAGE, or *l'eau d'un vaiſſeau*, the track or wake of a ſhip; the trace which ſhe leaves behind her on the ſurface of the ſea.

Doubler le SILLAGE *d'un vaiſſeau*, to ſail with twice the velocity of another ſhip; or, according to the ſea-phraſe, to ſail two feet to her one.

SILLER, to run a-head; to have headway through the ſea, &c.

SIMAISE, or rather CIMAISE, a wave or ogee in the ſculpture of the ſhip's mouldings.

SINGE, a ſort of gin, or machine, with a roller or winch in the middle, which is turned by handſpecs: and uſed to diſcharge goods from a boat or ſmall veſſel.

SINGLER. See CINGLER.

SITUATION *d'une terre*, the bearings and diſtances of a coaſt.

SLEE, a ſort of ſledge or cradle, laid under a ſhip's bottom in Holland, &c. when ſhe is drawn aſhore to be repaired or graved.

SOLDATS *de marine*, marines, or marine-forces.

SOLDATS-*gardiens*, a diviſion of marines ſtationed at a royal dock-yard.

SOLE, the bottom of a veſſel which has no keel, as punts, horſe-ferry-boats, and ſome barges of burthen.

Le SOLEIL *a baiſſé*, the ſun has fallen, or, has paſt the meridian; an expreſſion uſed at the time of obſerving it's altitude at noon.

Le SOLEIL *a paſſé le vent*, the ſun has overtaken the wind: *i. e.* the wind being ſouth, the ſun, by paſſing from ſouth to S S W, is ſaid to have paſſed the wind. Hence they ſay, in a contrary ſenſe, *Le vent a paſſé le Soleil.*

Le SOLEIL *chaſſe le vent*, the ſun chaſes the wind; a phraſe which implies the change of the wind from the eaſt to the weſt, by the ſouthern board, before ſunſet.

Le SOLEIL *chaſſe avec le vent*, the wind keeps pace with the ſun; an expreſſion that denotes the change of the wind according to the courſe and progreſs of the ſun.

Le SOLEIL *monte encore*, the ſun continues to riſe.

Le SOLEIL *ne fait rein*, the ſun ſtands ſtill. Both of theſe latter phraſes are peculiar to the operation of taking the meridian altitude.

SOLES, a name given to the bottom or tranſoms of a gun-carriage.

SOMBRER *ſous voiles*, to overſet in a ſquall of wind.

SOMMAILE, a bank or ſhoal. See BASSE.

SOMME, to deepen; as,

Le mer à SOMME', the water deepens, as the ſhip advances.

SONDE, or *plomb de ſonde*, the ſounding-lead; alſo the ſoundings, *i. e.* the ſand, gravel, &c. that ſticks to the bottom of the lead at the time of ſounding.

Aller à la SONDE, *Aller la* SONDE *à la main*, to ſail by the hand-lead, or by ſounding the depth of the water with a hand-lead as the ſhip advances.

SONDER, to ſound: to heave the hand-lead, or deep-ſea-lead.

SONDER *la pompe*, to ſound the pump.

SONNER *le quart*, to ring the bell at the cloſe of the night-watch.

SONNER *pour la pompe*, to ſtrike the bell for pumping the ſhip, as at every hour, or half hour.

SORTIR *du port*, to depart from a harbour; to ſail out or put to ſea.

SORTIR *le boute-feu à la main*, to ſet ſail with the match in hand: expreſſed of a port whoſe entrance or opening is ſo commodiouſly ſituated, that a ſhip may ſail from it with any wind, and be ready for engagement immediately after her departure.

SOU, or rather FOND, the bottom, or ground, at the depth of any part of the ſea. See alſo FOND.

SOUABRE. See FAUBER.

SOU-BARBE, a bracket or knee, uſually ornamented with ſculpture, and placed under the cat-head to ſupport it.

SOUBERME, a freſh, or torrent increaſed by the freſhes of a river.

SOUFFLAGE, the doubling of a ſhip, or covering her ſide with new wales and planks. See SOUFFLER.

SOUFFLAGE is alſo the new planking of a ſhip, or giving her a new ſkin, after the old planks are ripped off.

SOUFFLER, to double a ſhip with new planks and wales, ſo as to ſtiffen her when ſhe is built too crank; or to prevent or diminiſh the efforts of an enemy's cannon.

SOUFFLER *les canons*, to ſcale the great guns; or cleanſe them by blowing a little powder from them.

SOULIE, the bed of a ſhip, or the impreſſion made by her bottom on the mud, after having lain aground during the ebb tide.

SOULIER, the ſhoe of an anchor.

SOUN, or TSOUN, a large flat-bottomed ſhip navigated on the rivers of China.

SOUQUE! hang, or ſwing upon! a phraſe uſed by the common ſailors, whilſt they are pulling downward on any rope or tackle.

SOURCE *du vent*, the point of the compaſs in which the wind ſits.

SOURDRE, to riſe up, or brew; expreſſed of a cloud or ſquall iſſuing from the horizon towards the zenith.

SOURDRE *au vent*, to hold a good wind; to claw or eat to windward.

SOUS-ARGOUSIN, an officer in the gallies, who aſſiſts the argouſin in his duty. See ARGOUSIN.

SOUS-BARBE. See SOU-BARBE.

SOUS-BAREES, ſhort props or ſhores, placed under the ſtem, while the ſhip remains on the ſtocks.

SOUS BARQUE, the upper ſtreak of a lighter, or the ſtreak which lies cloſe under the gunnel.

SOUS COMITE, an officer in the gallies, who aſſiſts and relieves the COMITE. See that article.

SOUS FRE'TER, to under-freight a ſhip, or hire her out to a ſecond perſon, after having

having contracted for her freight with the proprietor.

SOUTE, a ſtore-room in the orlop of a ſhip, of which there are ſeveral; as,

SOUTE *au biſcuit*, the bread-room.

SOUTE *aux poudres*, the magazines, &c.

SOUTENIR, to ſupport under the lee; expreſſed of a current which acts upon the lee-ſide of a ſhip, and counter-balances the lee-way, when ſhe is cloſe-hauled, ſo as to keep her in the right courſe, without falling to leeward.

SOUTENIR *chaſſe*. See *Soutenir* CHASSE.

See SOUTENIR, to bear up againſt a ſcant-wind or current, without being driven much to lee-ward, or down the ſtream.

SPARIES. See CHOSES *de la mer*.

SQUELETTE, the carcaſe or ſkeleton of a ſhip; or the ribs, with the keel, ſtem, and ſtern-poſt, after the planks are ripped off.

STAMENAIS, or rather GENOUX, the lower-futtocks.

STRAPONTIN, a ſort of hammoc, uſed in hot climates to ſleep in.

STRIBORD, or TRIBORD, the ſtarboard-ſide of a ſhip.

Avoir l'amure à STRIBORD, to have the ſtarboard-tacks aboard, or to ſail upon the ſtarboard-tack.

SUAGE, a coat of tallow, ſoap, ſulphur, &c. with which the bottom of a ſhip is payed to enable her to ſail ſmoothly through the water.

SUD, the ſouth, or ſouth-point. See ROSE *de vents*.

Etre au SUD *de la ligne*, to be in ſouth latitude, or to the ſouthward of the equinoctial line.

SUPANNE, or *etre en* PANNE. See PANNE.

SUPER, to ſtop or cloſe accidentally; expreſſed of a leak which is choaked, or filled with ſea-weed, or ſuch like material that may have entered with the water.

SURCHARGER, to overload a ſhip.

SURJOUAILLE', or SURJAULE, foul of the anchor-ſtock; expreſſed of the cable.

SURLIER, to woold. See alſo ROSTER.

SURVENTE, a hard gale of wind; a tempeſt.

SURVENTER, to overblow, or blow a ſtorm.

SUSAIN, or SUSIN, a name ſometimes given to the quarter-deck. See GAILLARD.

SUSPENTES, vulgarly called SURPENTES, the main and fore-tackle pendents.

SYRTES, ſhifting-ſands, quick-ſands, or ſhelves.

T.

TABERNACLE, or TENDELET, a place under the awning of a row-galley, where the captain ſits to give his orders.

TABLEAU, the compartment, whereon the name is engraved or painted on the ſtern of a Dutch flight. See ECUSSON.

TABLETTE, the riſing-ſtaff; a form, or ſcale, uſed by ſhipwrights when erecting the frames of the timbers.

TABOURIN, the fore-caſtle of a galley, with the ſpace underneath it, where the artillery are loaded and fired. See COUVERT *de l'eſcoſele*.

TAILLE-MER, or *gorgere*, the lower part of a ſhip's cut-water, or of the prow in a galley.

TAILLES *de fond*, & TAILLES *de point*. See CARGUES *fond*, & CARGUES-*point*.

TALINGUER, or ETALINGUER, to bend the cable to the anchor-ring.

TALLARD, the ſpace, wherein the ſlaves of a row-galley are placed to manage their oars: It is ſituated between the *courſiere*, or middle gangway, and the gunnel.

TALON *de la quille*, the after-end of the keel, into which the foot of the ſtern-poſt is tenented: this is alſo called the ſhip's heel.

TALON *de rode*, the heel of the ſtem, or ſtern-poſt of a row-galley. See RODE.

Couper en TALUS, to hew a plank ſhelving, or with a ſlanting edge.

TAMBOUR, a drum; alſo the drummer, or perſon who beats it

TAMBOUR *d'eperon*, the doubling of the cut-water, or the planks nailed on the outſide of it, to defend it from the aſſaults of the waves.

TAMISAILLE, or TAMISE, the tranſom, upon which the tiller traverſes in a ſhip's gun-room.

TAMPONS, wooden ſhot-plugs, employed to fill up the holes made in a ſhip's ſide by the cannon balls of an enemy: alſo plates of iron, copper, or lead, uſed for the ſame purpoſe.

TAMPONS *de canon*, the tompions of the great guns.

TAMPONS *d'ecubiers*, hawſe-plugs.

TANGAGE, the act of pitching, or plunging with the fore and after ends of a ſhip.

TANGUER, to pitch or plunge deep in the water forward.

TANGUEURS, or GABARIERS, lightermen.

TAPABOR, a ſea-cap; a ſailor's cap or bonnet.

TAPEÇU, a ſort of ring-tail, water-ſail, or driver.

TAPONS. See TAMPONS.

TAQUETS, a general name for the larger cleats, or kevels, whereon the running-ropes are belayed.

TAQUET *à cornes*, a large cleat, having two branches or arms, as repreſented in plate II. fig. 17. *a*.

TAQUET *à gueule*, *ou à dent*, a hollow or notched cleat, as exhibited in plate II. fig. 17. *b*.

TAQUET *de fer*, a wraining-bolt. See ANTOIT.

TAQUETS *d'amure*, the cheſs-trees. See alſo DOGUE *d'amure*.

TAQUETS *de bittes*. See COURBES *de bittes*.

TAQUETS *de cabeſtan*, the whelps of the capſtern. See FUSEAUX.

TAQUETS *d'echelle*, the ſteps which are nailed on the gangway, whereby to aſcend or deſcend the ſhip's ſides.

TAQUETS *d'écoutes*, the kevels or great cleats, whereon the tacks and ſheets of the courſes are belayed.

TAQUETS *de hune à l'Angloiſe*, the cheeks of the bowſprit.

TAQUETS *de mâts*, the belaying cleats of the lower-maſts, which are uſually furniſhed with ſeveral pins whereon to faſten different running ropes.

TAQUETS *de ponton*, large hollow cleats fixed on the ſide of a pontoon, or ſheer-hulk, whereby to faſten the pendent of the relieving-tackle.

TAQUETS *de potence*, the cheeks of a common ſea-pump. See POTENCE.

TAQUETS *ſimples*, cleats which are formed nearly in the manner of a wedge or quoin; they are uſually nailed to the deck or ſides, to ſupport or wedge up any weighty body.

TARRIERE, an augre, or auger, uſed by ſhipwrights to bore the planks and timbers, ſo as to faſten them together with bolts and tree-nails.

TARTANE, a tartane or ſmall veſſel, uſed in the Mediterranean.

TEMPETE, a tempeſt or violent ſtorm.

TEMS, a general term for weather.

TEMS *affiné*, fine weather; clear weather, or a clear ſky. See AFFINE.

TEMS *à perroquet*, a top-gallant gale; top-gallant weather.

TEMS *de mer*, or *gros* TEMS, tempeſtuous weather.

TEMS *embrumé*, a fog, or foggy weather.

TENAILLE, a wooden engine formed like a pair of pincers, and employed to confine the planks of a ſhip in their places, till they can be nailed or bolted to the timbers.

TENDELET, the tilt of a boat; alſo the awning or canopy in the after part of a galley.

TENIR *au vent*, to keep the wind; to ſail cloſe upon a wind.

TENIR *bon*, to ſtop or ceaſe from any exerciſe or labour in a ſhip.

TENIR *la mer*. See TENIR *la* MER.

TENIR *le balant d'une manœuvre*, to make faſt the bight of a rope when it hangs ſlack.

TENIR *le largue*, to ſail large, or with a large wind.

TENIR *le lit du vent*, to have the wind right on end, or right in one's teeth.

TENIR *le lof*. See LOF & OLOFE'E.

TENIR *le vent*. See ALLER *au plus près*.

TENIR *ſous voiles*, to get under ſail; to ſet ſail ready for putting to ſea.

TENIR *un bras*, to brace, or haul in the brace of a yard.

TENIR *une manœuvre*, to make faſt, or belay a rope.

TENIR, or *voir une terre*. See OUVRIR.

TENON, a tenent, or tenon, formed on the end of a piece of timber to fix it in a mortiſe.

TENON *à queüe d'aronde*, a pivot; or tenon, formed like the ſpindle of a capſtern.

TENON *de l'étambot*, the tenon on the heel of the ſtern-poſt, which is let into the keel.

TENON *de mât*. See THON *de mât*.

TENONS *de l'ancre*, the nuts of an anchor.

TENUE, the gripe or hold which an anchor has of the ground where it is ſunk. See FOND *de bon tenüe*.

TERMES, the quarter-pieces of a ſhip, by which the ſide is terminated abaft.

TERRE *de beurre*, cape fly-away, a cant-phraſe applied to any illuſive appearance of land in the horizontal clouds, after ſun-ſet or before ſun-riſe.

TERRE *defigurée*, land which cannot be eaſily diſtinguiſhed at ſea, on account of the clouds which reſt upon it.

TERRE *fine*, land which may be diſtinctly beheld from the ſea.

TERRE *groſſe*, or *groſſe terre*, high land on, or near the ſea-ſhore.

TERRE *hachée*, a coaſt with an opening between two mountains.

TERRE *maritime*, the ſea coaſt, or ſea-ſhore.

TERRE *Méditerranée*, an inland country.

TERRE *qui aſſéche*. See ASSECHER.

TERRE *qui fuit*, double-land, or land ſhut-in behind a cape or promontory.

TERRE *qui ſe donne la main*, land open to the ſea, and acceſſible to ſhipping.

TERRES *baſſes*, low flat lands on the ſea-coaſt.

TERRES *hautes*, high land on the ſea-ſhore; a bold, or iron-bound coaſt.

Aller TERRE *à terre*. See ALLER.

Dans la TERRE, or *Dans les* TERRES, inland; up in the country.

Mange par la TERRE, land-locked; ſhut-in by the land.

Prendre TERRE, to arrive at the land.

Tout à TERRE, cloſe in-ſhore.

TERRE-*neuvier*, a Newfoundland cod-fiſher.

TERRIER, to come to anchor; to arrive at the land after a long cruiſe.

TERTRE, an hommock, or hillock, riſing on a level ſhore, and ſeen from the ſea.

TESSEAUX. See BARRES *de hune*.

TETE *de l'ancre*, the croſs of the anchor, where the ſhank terminates upon the arms.

TETE *de more*. See CHOUQUET.

TETE *de cabeſtan*, the drum-head of the capſtern.

TETE *de potence des pompes*, the cheeks of the pump which ſupport the brake.

TETE *de vent*, the riſing, or ſpringing-up of a breeze.

Faire TETE, to hold well by the moorings; to be well moored.

TETIERE, the head of a ſail.

THON *de mât*, the maſt head, or the ſpace comprehended between the cap of the lower-maſt, and the treſtle-trees beneath it: and ſo of the top-maſt.

TIERS *point*, a triangular ſail, as a lateen-ſail, or ſtay-ſail. See LATINE.

TILLAC. See PONT.

Franc-TILLAC, or rather *premier-pont*, the gun-deck, or lower-deck.

Faux-TILLAC, the orlop. See FAUX-*pont*, and FAUX-*baux*.

TILLE, the cuddy, or cabin of a lighter, or other undecked veſſel; alſo the place where the helmſman ſtands in a Dutch flight.

TIMON, or BARRE *de gouvernail*, the tiller.

TIMONNIER, the helmſman or ſteerſman.

TINS, the blocks upon which the keel and floor-timbers of a ſhip are laid while ſhe is building.

TIRANT *d'eau*, the draught of water of a ſhip.

TIRE! the order to the boat's crew to row hard, or forcibly, a-head.

TIRE *du vent*, or TIRE-*avant!* pull away! pull a head chearly!

TIRE-FOIN, the worm uſed to draw the charge of a cannon.

TIRER *tant de pieds d'eau*, to draw ſo many feet of water, in order to float. See TIRANT *d'eau*.

TIRER *à la mer*, to ſtretch out to ſea.

TIRE-VEILLES, the man-ropes, or entering-ropes of the ſide.

TIRE-VEILLE *de beaupré*. See SAUVE-*garde*.

TOILE *neyale*, canvaſs, or duck, employed to make ſails; ſail-cloth.

TOILES *de ſaberds*, port-ſails. See VOILES *à leſt*.

TOISER, to meaſure by the fathom. See BRASSE.

TOLETS, or ESCOMES. See ESCOMES.

TOMBER,

TOMBER, as a ſea-term, implies to lean or incline; alſo to ceaſe or fail; as,

TOMBER *ſous le vent*, to fall to leeward.

TOMBER *ſur un vaiſſeau*, to fall aboard a ſhip to the leeward.

Le vent a TOMBE', the wind is ſpent, or decayed; it has become calm.

Le Mât TOMBE *en arriere*, the maſt hangs, or rakes aft.

TONIES, a ſort of Indian boats, which are uſually laſhed together in couples, in order to carry ſail the better. The two thus pared are called *Catapanel*.

TONNE, a can-buoy, placed over any ſhelf or rock in a channel; alſo the nun-buoy of a ſhip.

TONNES are alſo barrels fitted to cover the maſt-head when it is unrigged, to preſerve it from rain.

TONNEAU, a tun, containing 2000lb. alſo a general name for all ſorts of large caſks, whoſe meaſure is equal to that weight.

TONNELIER, the cooper of a ſhip, who has the charge of all the proviſion-caſks, to keep them in proper repair.

TONTURE, the ſheer of the wales and decks of a ſhip.

TONTURE *des baux*, the round-up, or convexity of a ſhip's beams.

TORDES. See SAUVE-*rabans*.

TORON. See TOURON.

TORTUE *de mer*, a ſort of tranſport-ſhip, formed with a high deck, for the convenience of carrying troops, paſſengers, and their effects between decks.

TOSTE *de chaloupe*, the thwarts, banks, or ſeats of a boat, whereon the rowers ſit to manage their oars.

TOUAGE, the exerciſe of warping or towing a ſhip from place to place. See alſo REMORQUER.

TOUCHE, the priming-wire, or priming-iron of a cannon. See DEGORGEOIR.

TOUCHER *terre*, or, ſimply, TOUCHER, to run a-ground, or ſtrike againſt a rock, ſhore, or ſand-bank.

TOUCHER *à une côte*, or *à une port*, to touch at any coaſt or harbour.

TOUCHER *un compas*, to touch the needle of a compaſs with a magnet.

TOUE'E, a name given to two or three hawſers bent upon an end, *i. e.* faſtened at the end of each other, and attached to an anchor a-head, ſo as to ride a ſhip with more ſecurity.

TOUER, to warp a ſhip from one place to another in a harbour.

TOUR *à feu*, a light-houſe. See PHARE.

TOUR *de bitte au cable*, a turn of the cable about the bits; the bitting of a cable.

TOUR *de cable*, a foul hawſe; a turn or elbow in the hawſe. See CABLE and CROIX.

TOUR-*et-choque*, a weather-bit of the cable, or a turn and half-turn about the bits.

TOUR *marine*, a watch-tower or block-houſe, on the ſea-coaſt.

TOURBILLON, a whirlwind upon the ſea.

TOURILLONS, the trunnions of any piece of ordnance.

TOURMENTE, a tempeſt, or great ſtorm. See TEMPETE.

TOURMENTER, when expreſſed of a ſhip, implies to labour or ſtrain violently; when ſpoken of timber, it denotes to warp or twiſt.

TOURMENTIN, a name ſometimes given to the ſprit-ſail top-ſail. See PERROQUET *de beaupré*.

TOURNANT *de mer*, a whirlpool, or dangerous race in the ſea.

TOURNANT is alſo a ſtake or poſt ſunk into the angles of a canal, for the convenience of warping veſſels up or down.

TOURNER *le bord*. See VIRER.

TOURNER *ſur ſa ancre*, to paſs round the anchor; underſtood of a ſhip that, riding by a ſingle anchor, has probably incircled the place where it lies, ſo as to ſweep it with her cable, and make a foul anchor.

TOURNEVIRE, the voyol of the cable. See CABESTAN.

TOURON, the ſtrand of a rope, compoſed of a certain number of rope-yarns.

TOUT *le mond haut!* all hands, hoay! all hands upon deck, hoay! a call, or order of the boatſwain, to ſummon all the ſailors upon the upper-deck.

TOUT *le monde bas*, ſit down cloſe, all hands! the order to the ſhip's crew to lie ſnug upon deck or below, ſo as not to retard the ſhip's courſe by their motion upon deck, nor be diſcovered by the enemy, of whom they are in chace.

TRAIN *de bateaux*, a train of boats in tow.

TRAIN *de bois*, or FLOTTE, a raft, or float of timber.

A la

A la TRAINE, towing overboard; expreſſed of any thing towed in the ſea by a rope whilſt the ſhip is advancing.

TRAINE'E, a train of gun-powder.

TRAIT *de compas*, or TRAIT *de vent*. See RUMB.

Voile à TRAIT *quarré*, a ſquare ſail; ſuch are the courſes, top-ſails, &c. of a ſhip.

TRAITE, the trade or commerce carried on between ſhipping and the inhabitants of any country where they arrive.

TRAMONTANE, the north-wind, in the dialect of Provence.

TRAPE, or ATTRAPE, a tackle-fall. See CORDE *de retenue*.

TRAVADE, a tornado, or thunder-guſt; as thoſe on the coaſt of Africa.

TRAVAILLER, when applied to a ſhip, is to roll or pitch heavily, as in a high ſea: alſo to ſwell tumultuouſly, as the waves themſelves. See ROLIS.

TRAVAILLEURS, the ordinary, or labourers, &c. employed to aſſiſt in fitting out ſhipping for the ſea.

TRAVERS, in a naval ſenſe, generally denotes athwart; abreaſt of, with ſides parallel, and heads equally advanced: it is alſo applied to any piece of timber which is laid acroſs others, and ſcored into them.

Se mettre par le TRAVERS, or *Paſſer par le* TRAVERS *de Torbay*, to croſs or ſtand athwart Torbay, &c.

Le vaiſſeau eſt moüillé par notre TRAVERS, the ſhip has come-to abreaſt of us.

La maree vient par le TRAVERS *du vaiſſeau*, the tide takes the ſhip athwart, or on the broadſide.

Moüillée par le TRAVERS *de Belleiſle*, at anchor off Belleiſle.

TRAVERSE, a paſſage from one port to another; an outward or homeward-bound voyage.

TRAVERSE *miſaine!* flat-in the fore-ſheet! flat-in forward! the order to pull the lower corners of the head-ſails in, towards the middle of the ſhip, in order to make her fall off when the ſails ſhiver in the wind.

TRAVERSER, to come abreaſt of, to ſheer athwart-ſide of.

TRAVERSER *l'ancre*, to get the anchor up along the bow, in order to ſtow it parallel to the gunnel.

TRAVERSER *la lame*, to head the ſea; to lay againſt the ſetting of the ſea.

TRAVERSER *miſaine*. See MISAINE.

TRAVERSIER, a ſmall fiſhing veſſel on the coaſt of Rochelle.

TRAVERSIER *d'écoutilles*, a gutter ledge, or croſs-bar laid in the middle of a hatch-way to ſupport the covers.

TRAVERSIER *de chaloupe*, the fore-beam or fore-thwart of a long-boat.

TRAVERSIER *de port*, a wind that ſets right into any harbour, ſo as to prevent the departure of a ſhip from it.

Mettre la miſaine au TRAVERSIER, to bring the fore-tack to the cat-head; as when the wind is large.

TRAVERSIN. See TAMISAILLE.

TRAVERSIN *d'écoutilles*, a gutter-ledge, or croſs-piece of a hatchway.

TRAVERSIN *d'élinguet*, the beam into which the pauls of the capſtern are bolted.

TRAVERSIN *des herpes*, a ſhip's davit; ſee alſo MINOT.

TRAVERSIN *des bittes*, the croſs-piece of the bits.

TRAVERSIN *de chateau d'avant*, the croſs-piece of the fore-caſtle, which contains the kevels and cleats for belaying ropes.

TRAVERSIN *des affûts*, the tranſoms of the gun-carriages.

TRAVERSINS *des taquets*, the ſtep, or frame of timber in which the main and fore-ſheet kevels are lodged.

TREBUCHET, a ſcale, or meaſure, employed by ſhipwrights to determine the difference between the curves of thoſe timbers which are placed neareſt the greateſt breadth, and thoſe which are ſituated near the extremities, where the floor riſes and grows narrower.

TRE'LINGAGE, a crow-foot. See MARTICLES.

TRE'LINGAGE *des étais ſous les hunes*, the crow-feet of the tops.

TRE'LINGAGE *des haubans*, the cat-harpins of the ſhrowds.

TRE'LINGUER, to reeve a crow-foot, or form any thing ſimilar thereto, as the clue of a hammoc, &c.

TRE'MUE, a trunk, or ſloping paſſage formed in ſome merchant-ſhips, whereby the cables are conducted, from the top of the fore-caſtle, downward to the hawſe: it is uſually covered with a ſmall grating.

TRE'MUE is alſo a hood, or companion, placed over the coamings of the hatches, in merchant-ſhips, to keep the ſteerage warm, and prevent the rain or ſea-water from falling into it.

TREOU, a ſquare ſail, uſed in ſcudding, by ſmall veſſels, particularly ſloops, tartans, galleys, &c.

TREPOR, atrip, the anchor drawn out of the ground in a perpendicular direction. Topſails are atrip when hoiſted up to their utmoſt extent.

TRE'PORT, or *allonge de pouppe*, a ſtern-timber, whoſe lower end correſponds with the top of the ſtern.

TRE'SORIER *général de la marine*, an officer whoſe duty reſembles that of our treaſurer of the navy.

TRESSE *de meche*, a large match formed of three matches twiſted round each other, ſo as to fire a cannon with more certainty and expedition.

TRESSES, a ſort of knittles frequently uſed as ſeizings.

TRE'VIER, or *Maître-voiler*, the maſter ſail-maker of a ſhip.

TREUIL, a roller or winch of ſeveral kinds.

TRE'VIRER. See CHAVIRER.

TRIANGLE, a ſtage hung over a ſhip's ſide, to caulk the ſeams, or pay the planks: alſo a machine compoſed of three capſtern-bars, whoſe ends being tied together, form a triangle, to incloſe any maſt, along which this machine may be hoiſted or lowered, to ſcrape the maſt, or pay it with turpentine, reſin, tallow, &c.

TRIBORD, the ſtarboard ſide of the ſhip. See alſo STRIBORD.

TRIBORDAIS, ſtarbowlines; a cant term for the ſtarboard-watch.

TRIE'RARQUE, an officer formerly appointed to furniſh a ſhip with ſoldiers, rowers, arms, and proviſions.

TRINGLE, a thin lath, uſed occaſionally to fill up the edges of a gun-port, dead-light, &c. and make it tight, ſo as to exclude the wind or water.

TRINGLE is alſo a batten of wood about two feet long, nailed againſt the butts or joints of a boat's planks, to ſtrengthen them in that place.

TRINGLER, to mark timber with a chalked or red line, in order to hew or bevel it to the exact form and ſcantlings.

TRINQUET, the fore-maſt of a row-galley.

TRINQUETTE, a triangular fore-ſail, as that of a ſloop, and ſuch veſſels.

TRISSE *de beaupré*, the ſtanding-lifts of the ſprit-ſail yard.

TRISSE *de racage*. See DROSSE *de racage*.

TROMPE, or *pompe de mer*, a water-ſpout.

TROMPETTE *marine*, a ſpeaking-trumpet uſed at ſea.

TROUS *d'amure de miſaine*. See BOUTE-*de-lof*.

TROSSE *de racage*, a ſmall tackle, formerly uſed as a nave-line.

TROUS *d'écoutes*, the ſheave-holes, which are cut obliquely through a ſhip's ſide, wherein the main and fore-ſheets are reeved. See CLAN.

TROUS *de la civadiere*. See OEIL.

TUGUE. See TEUGUE.

TUTELLE, the tutelary ſaint repreſented on the ſtern of a ſhip, and to whoſe protection ſhe is conſigned, in nations under the Catholic ſuperſtition.

V.

VADROUILLE, a bruſh uſed to pay a ſhip's bottom with tallow or compoſition.

VA *et vient*, a ſpan, or rope extended from one place to another, whereon to draw any thing along by means of a traveller.

VAGANS, vagrants or hovellers, who infeſt the ſea-coaſt in a tempeſt, in expectation of plunder from ſome ſhip-wrecked veſſel. See DEBRIS.

VAGUES, the waves or ſurges of the ſea. See LAMES.

VAIGRER, to attach the planks and thick-ſtuff of a ſhip's cieling, to the timbers.

VAIGRES, *ou ferres*, a general name for the clamps and thick-ſtuff uſed in the cieling of a ſhip; as,

VAIGRES *de fond*, the thick-ſtuff placed next to the keel.

VAIGRES *d'empature*, the thick-ſtuff placed between the floor-heads and the *vaigres de fond*.

VAIGRES *de pont*, the clamps which ſupport the ends of the beams.

VAIGRES *de fleurs*, the thick-ſtuff placed oppoſite to the floor-heads.

VAISSEAU, a ſhip, or large veſſel of war, or burthen.

VAISSEAU *à la bande*, a ſhip lying along, or heeling gunnel-to, as under a weight of ſail in a freſh wind: this is frequently called lying down on the broadſide or beam-ends.

VAISSEAU *à l'ancre*, a ſhip at anchor.

VAISSEAU *à ſa poſte*, a ſhip in her ſtation, as appointed by the commanding officer.

VAISSEAU *armée en guerre*, armed ſhip, a veſſel occaſionally taken into the ſervice, to guard a coaſt, or attend on a ſquadron, and armed and equipped in every reſpect as a ſhip of war. She is on the eſtabliſhment of a king's ſloop, and commanded by a lieutenant, with a maſter, ſurgeon, purſer, &c.

VAISSEAU *beau de combat*, a roomy ſhip, advantageouſly built for battle, as carrying her lower tier high above the water, and having a good heighth between decks.

VAISSEAU *corſaire*. See CORSAIRE.

VAISSEAU *démarrée*, a ſhip unmoored, or broke adrift from her moorings. See DEMARRER.

VAISSEAU *gondolé*, a ſhip built with a great ſheer.

VAISSEAU *qui a le côté droit comme un mur*, a wall-ſided ſhip.

VAISSEAU *qui a le côté foible*, a ſtraight-ſheered ſhip.

VAISSEAU *qui a le côté fort*, a round-ſided ſhip.

VAISSEAU *qui cargue*, a crank ſhip.

VAISSEAU *qui charge a fret*, a trading ſhip. See FRET.

VAISSEAU *qui ſe manie bien*, a good working ſhip; a ſhip that is eaſily managed and ſteered.

VAISSEAU *qui ſe port bien à la mer*, a good ſea-boat.

VAISSEAU *rallongé*, a lengthened ſhip.

VAISSEAU *de bas-bord*, a low-built veſſel navigated with ſails and oars; as the gallies in the Mediterranean.

VAISSEAU *de haut-bord*, a general name for large ſhips.

VAISSEAU *du roy*, fleet of ſhips of war, navy.

VALANCINE. See BALANCINE.

VALETS *d'artillerie*, the boys which attend the great guns in a ſea-fight, &c.

VALTURE, the laſhing of the ſheers; or a rope employed to laſh two maſts together in any particular place, when they are to be uſed as ſheers.

VARANGUAIS. See MARTICLES.

VARANGUES, a general name for the floor-timbers; as,

VARANGUES *acculées*, the crotches or floor-timbers afore and abaft.

VARANGUES *demi-acculees*, the floor-timbers placed between the *varangues acculees* and the

VARANGUES *plates*, or VARANGUES *de fond*, the flat floor-timbers placed in the middle or broadeſt part of a ſhip's floor.

VARECH, ſea-wreck. Alſo the wreck of a ſhip. See CHOSES *de la mer*.

VARIATION, the variation of the compaſs. See alſo DE'CLINAISON.

VARIATION *vaut la rout*, the variation is on the weather-ſide, or oppoſite to the lee-way.

VASART, oozy, or ſlimy, expreſſed of a particular bottom, or ſoundings at ſea. See FOND.

VASSOLES, laths or battens placed between the ledges of the gratings.

VEGRES. See VAIGRES.

VEILLE *la driſſe!* ſtand by the haliards! the order to have the top-ſail-haliards ready to caſt looſe in caſe of a ſquall.

VEILLE *l'écoute de hune!* ſtand by the top-ſail ſheets!

VEILLE *les huniers*. See VEILLE *la driſſe*.

VEILLER, to watch, attend, or take care of any thing; as,

Il faut VEILLER *les máts, & non le côté*, we muſt look to the maſts, and not to the ſide; expreſſed of a ſhip, whoſe maſts, being good, will rather overſet her, than be carried away.

Ancre eſt à la VEILLE. See ANCRE.

Bouée à la VEILLE, the buoy floats in ſight, as over the anchor.

VENIR *au vent*, to haul the wind, nearer to the point whence the wind ariſes.

VENT, the wind.

VENT *alize*, a trade wind, or monſoon.

VENT *arriere*, a wind right aft or aſtern.

VENT *d'amont*, a land-wind, or land-breeze.

VENT *d'aval*, a ſea wind, or ſea-breeze.

VENT *de bouline*, a ſcant-wind, on which the ſhip cannot lie her courſe without being cloſe-hauled.

VENT *de quartier*, a quarterly, or quartering wind *.

VENT *en pouppe*. See VENT.

VENT *en pouppe, largue la ſoute*; large wind, large allowance; an expreſſion uſed by ſeamen on the commencement of a fair wind, after they had been put to ſhort allowance in conſequence of foul winds.

Le VENT *en pouppe fait trouver la mer unie*, a ſtern wind brings an eaſy ſea; expreſſed of a ſhip when ſailing afore the wind, in which movement ſhe is leſs ſtrained by the agitation of the ſea, than when ſhe lies in the trough or hollow of it, ſideways.

VENT *largue*, a large wind.

VENT *routier*, a wind which ſerves to go and come upon the ſame line; ſuch is the wind upon the beam.

VENTS *variables*, variable winds, or ſuch as are without the tropics.

VENT *à pic*, the wind is right down; a witticiſm amongſt ſailors, to ſignify that there is a total ceſſation of wind, at which time the vanes hang right downward, inſtead of blowing out.

VENTER, to blow or ſpring up; underſtood of the wind.

VENTILATEUR, a ventilator uſed at ſea.

VERBOQUET, a guy uſed by ſhipwrights to keep ſteady any piece of timber, ſo as to lodge it ſecurely in a ſhip's frame.

VERGE *de giroüette*, the ſpindle of the vane at the maſt-head.

VERGE *de l'ancre*, the arm of an anchor.

VERGE *de pompe*, a pump-ſpear. See alſo BARRE *de pompe*.

VERGUE, the yard of any principal ſail which traverſes the maſt at right angles.

VERGUE *à corne*. See CORNE *de vergue*.

VERGUE *de foule*, the croſs-jack-yard.

VERGUE *en boute dehors*, the main-boom of a ſloop-rigged, or ſchooner-rigged veſſel.

VERGUE *traverſée*, the ſprit which traverſes a boat's ſail diagonally.

VERIN, an inſtrument nearly ſimilar to a jack-ſcrew, and uſed occaſionally to launch a ſhip from the ſtocks.

VEUE, or VÛE, *etre à vûe*, *avoir la vûe*, to be in ſight of; to make or diſcover at ſea, as the land, or ſome diſtant object. See NON-*vûe*.

VEUE *par vûe*, *& cours par cours*, ſailing by the bearings and diſtances of the land, on the ſea-coaſt.

VIBORD, the quick-work, or that part of a ſhip's ſide which is comprehended between the drift-rails and the waiſt-rail.

VICE-AMIRAL, the vice-admiral of France.

VICTUAILLES. See VIVRES.

VICTUAILLEUR, a contractor, or agent-victualler.

VIF, alive, buſy, all in motion; an epithet applied to a wharf, dock, or ſlip, where the artificers are all at work on the ſhipping.

VIF *de l'eau*, or *haute marée*, high-water.

VIGIE, a lurking rock, or reef; a rock under the ſurface of the water.

VIGIER, to look out, or watch upon deck; or at the maſt head, &c.

VIGIER *une flotte*, to dodge, or watch the motions of a fleet.

VIGOTS *de racage*. See BIGOTS.

VINDAS, a ſort of moveable capſtern; alſo a windlaſs. See VIREVAUT.

VIRAGE, the act of heaving up any weighty body by a crab or capſtern.

VIRER, to overſet.

VIRER *au cabeſtan*, to heave the capſtern, or heave at the capſtern.

VIRER *de bord*, to go about, or put about-ſhip.

VIRER *vent arriere*, to veer, or wear.

VIRER *vent devant*, to tack, or put about head-to-wind.

VIREVAUT, the windlaſs of a ſhip or boat.

VIROLE, a little iron ring placed on the ſmall end of a bolt which is driven through any part of a ſhip's decks or ſides; it is uſed to prevent the fore-lock from cutting the wood.

VIROLET. See MOULINET.

VIRURE, a ſtreak of planks continued from the ſtem to the ſtern-poſt.

VIRURE is alſo the ſheer of any plank in the ſhip's ſide.

VISITE *de vaiſſeau*, an examination of the cargo of a ſhip by the officers of the revenue.

* M. Saverien defines this to be a wind perpendicular to the ſhip's courſe, and, conſequently, a wind *upon the beam*; but I have ventured to correct this explanation, by the authority of M. Aubin, who is certainly right in his definition.

VISITEUR, an officer reſembling our tide-ſurveyors of the cuſtoms.

VITTES *de gouvernail.* See FERRURE.

VITTONIERES. See ANGUILLERES.

VIVIER, a fiſhing-boat, furniſhed with a well filled with water amid-ſhips, whereby the fiſh are kept alive till the veſſel arrives in port.

VIVRES, the proviſions uſed for the ſubſiſtence of the ſhip's crew at ſea, &c.

UN, *deux, trois*, an exclamation, or ſong, uſed by ſeamen when hauling the bowlines, the greateſt effort being made at the laſt word. Engliſh ſailors, in the ſame manner, call out on this occaſion, —haul-in—haul-two—haul-belay!

VOGUE, the rowing of a galley; the movement or courſe of a galley rowed with oars.

VOGUE-*avant*, the rower who holds the handle of an oar and gives the ſtroke.

VOGUER, to row, or give head-way to a galley or other veſſel by rowing.

VOILE, a ſail; alſo a ſhip diſcovered at a diſtance.

Avec les quatre corps des VOILES, under the courſes and top-ſails.

Faire toutes VOILES *blanches*, to cruiſe as a pirate; to make all fiſh that comes to the net.

Forcer de VOILES, to crowd ſail. See FORCER.

Ce vaiſſeau porte la VOILE *comme un rocher*, the ſhip carries her ſail as ſtiff as a church, or without ſeeming to heel.

VOILES *ſur les cargues*, ſails clewed up, or hauled up in the brails.

VOILES *ſur le mât*, ſails laid to the maſt, or aback. See COEFFE'.

Régler les VOILES, to determine the quantity of ſail to be carried in each ſhip, in order to keep company with the reſt of the fleet.

Toutes VOILES *hors*, all ſails ſet; all ſails out, or ſtanding.

VOILES *au ſec*, ſails looſed, to dry in the ſun or wind.

Les VOILES *foüettent le mât*, the ſails beat againſt the maſt, as when firſt taken aback.

VOILE *Angloiſe*, a boat's ſail with a diagonal ſprit.

VOILE *d'eau*, a ſort of water-ſail uſed by the Dutch.

VOILE *defoncée*, a ſail ſplit or rent aſunder in the bunt or middle.

VOILE *de fortune.* See TREOU.

VOILE *déralinguée*, a ſail blown, or torn from the bolt-rope.

VOILE *en banniere*, a ſail whoſe ſheets being ſlackened or flown in a ſtorm, flies looſe, and flutters in the wind like a flag or enſign.

VOILE *en pantenne*, a ſail ſhivering in the wind for want of being properly trimmed.

VOILE *enverguée*, a ſail bent to it's yard.

VOILE *latine*, or VOILE *à oreille de liévre.* See LATINE.

VOILE *quarrée*, a ſquare ſail, or ſail which is nearly ſquare; ſuch as are the courſes, top-ſails, and top-gallant-ſails of all ſhips.

VOILES *baſſes*, the courſes. See BASSE VOILE & PACFI.

VOILES *de l'arriere*, the after-ſails.

VOILES *de l'avant*, the head-ſails.

VOILES *d'étai*, the ſtay-ſails. See E'TAI.

VOILERIE, a ſail-loft, or place where ſails are conſtructed.

VOILIER, a ſail-maker.

Bon VOILIER, or *mauvais* VOILIER, when expreſſed of a ſhip, implies a good or bad ſailor, or one that ſails ſwiftly or heavily.

VOILURE, a general name for all ſorts of ſails belonging to a ſhip.

VOILURE, a complete ſuit of ſails, with their furniture; alſo the trim of the ſails.

Sous meme VOILURE, under the ſame ſail; expreſſed of two ſhips in company which carry the ſame quantity and number of ſails.

Regler ſa VOILURE, to regulate the quantity of ſail to be carried, in order to keep company with ſome other ſhip or ſhips.

Toute la VOILURE *de l'avant*, all the head-ſails.

Toute la VOILURE *de l'arriere*, all the after-ſails.

VOIR *l'une par l'autre.* See OUVRIER & *tenir.*

VOIR *par proue*, to ſee, or diſcover, ahead of the ſhip.

Donner la VOIX, to ſing out; as in hauling, hoiſting, heaving, &c.

VOLE'E, a platoon, or limited number of great guns, fired at once in a ſea-fight.

VOLET, a little ſea-compaſs, uſed in a long-boat or cutter.

VOLONTAIRES, volunteers in a ſhip of war.

VOLTE, a particular courſe or route; alſo

alſo the movement of bearing away, or hauling the wind, either to change the courſe, or bring the broadſide to bear upon an enemy.

VOUTE, or VOUTIS, the upper counter of a ſhip, upon which the *ecuſſon* is placed.

VOYAGES *de long cours*, a long voyage, as thoſe to China, or the Indias.

URETAC, a fore-tack-tackle, or preventer fore-tack.

VRILLE, a wimble, or drill uſed by ſhipwrights, &c. to bore holes.

US & *coutumes de la mer*, the uſages and cuſtoms of the ſea, which are partly regulated by the laws of Oleron.

USANCE, the agreement, or contract, made between the maſter, the owner, and freighters of a ſhip. See alſo the preceding article.

UTENSILS *du canon*, a general name for all the inſtruments uſed in charging and firing a cannon, as the rammer, the ladle, the ſponge, the linſtock, &c.

W.

WATREGANS, pronounced OUTREGANS, a ſort of canals or ditches, filled with water, which are uſually navigable for boats and ſmall craft.

WOLFE, or *Vulfe*, a whirlpool, or race, on the coaſt of Norway.

Y.

YACHT, or YAC, a yacht.

YEUX *de bœuf*, bulls eyes, or wooden travellers; alſo the trucks of a parrel.

YEUX *de pie*. See OEIL *de pie*.

Z.

ZEPHIRE, or ZEPHIR, the weſt wind.

ZOPISSA, or *poix navale*, tar. See GOUDRON.

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